WRITTEN BY

JIM BOYCE

ROB TIDROW

Windows® 8 BIBLE

THE COMPREHENSIVE, TUTORIAL RESOURCE

EXPLORE THE LATEST TOOLS AND FEATURES

MASTER INSIDE TRICKS AND BEST PRACTICES

DISCOVER WHAT YOU NEED, WHEN YOU NEED IT

Windows® 8

Bible

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Jim Boyce
Rob Tidrow

WILEY
John Wiley & Sons, Inc.

Windows® 8 Bible

Published by
John Wiley & Sons, Inc.
10475 Crosspoint Boulevard
Indianapolis, IN 46256
`www.wiley.com`

Copyright © 2013 by Jim Boyce and Rob Tidrow

Published by John Wiley & Sons, Inc., Indianapolis, Indiana
Published simultaneously in Canada

ISBN: 978-1-118-20388-0
ISBN: 978-1-118-22830-2 (ebk)
ISBN: 978-1-118-24074-8 (ebk)
ISBN: 978-1-118-26549-9 (ebk)

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

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Library of Congress Control Number: 2012944698

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Acknowledgments

A revision of an existing book is much different from a project started from scratch, in large part because the final result builds on the work of the previous author. So, first and foremost, much appreciation to Jim Boyce for all of his efforts in creating the body of work that *Windows 8 Bible* is built upon. With such a short project timeline, having a solid foundation was critical.

The authors also want to recognize Carol Long and Carole McClendon for bringing us this opportunity. This project would not have stayed on track without Adaobi Obi Tulton pushing and pulling us. Finally, we offer our appreciation and thanks to the rest of the editorial team for their help in pulling together this project: Todd Meister, Nancy Rapoport, Sydney Argenta, Maureen Spears, Rayna Erlick, Claire Johnson, and Daniel Scribner.

It was a great experience.

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Introduction

Welcome to *Windows 8 Bible*. If you are familiar with Windows, you might know that the Windows operating system has existed for over two decades. In that time, the Windows OS has transformed in many ways as computer hardware has changed dramatically.

Windows 8 is the latest edition in the Windows family and builds on the usability and performance improvements in Windows 7. One of the biggest differences, however, is the shift in support in Windows 8 for tablet and handheld devices. The new streamlined, tile-based Windows 8 interface is designed from the ground up for tablet devices, and Windows 8 provides a consistent user experience across a range of devices from cell phones to PCs.

While we have tried to cover as many of the features and capabilities as Windows 8 offers, some naturally fall through the cracks because we have only so much space in this book. With a good understanding of the key features, however, you are well on your way to getting the most from your Windows PC.

Whom This Book Is For

Not everyone wants to be a computer expert, and few have the time to become one. Most people just want to use a computer to get things done, or even just to have some fun. This should come as no surprise. After all, not everyone who drives a car wants to be a professional mechanic. Not everyone who uses a cell phone wants to be an electrical engineer. So why should everyone who uses a computer want, or need, to be a computer expert? They shouldn't. Some people need to just be computer *users*, people who use the computer without being total nerds about it.

This book is for the computer *users*. The people who just want to use their computers to have some fun and get some things done. It might seem like an awfully big book for such an audience. The only reason it's such a big book is because there are *so many* things you can do with Windows 8.

Most of us prefer to learn by discovery, by exploring and trying things out. It's a lot more fun that way and typically much more effective. However, a couple of problems are evident with that approach. For one, you can get yourself into a bind from time to time. For another, when you get to a place where you don't know what's going on, sometimes you need to fill in some gaps before you can move on and continue learning by discovery.

A book can help with that by covering all the stuff everyone else assumes you already know. Especially if that book is divided up into sections and chapters that deal with one topic at a time, so you can focus on just the thing you need to know, when you need to know it. Which brings us to …

How to Use This Book

A book that supports learning by discovery needs to have some elements of a tutorial and some elements of a reference book. We guess you could say it has to be a reference book divided into multiple mini-tutorials, so you can learn what you need to know about one topic, whenever it becomes important to you. To that end, this book is divided into ten major parts, each of which covers a large topic.

Each part, in turn, is divided into multiple chapters, each chapter covering a smaller topic. Chapters are divided into sections and subsections, all designed to help you find the information you need, when you need it. The Table of Contents in the front of this book covers all the specifics. The index at the back of the book helps you find things based on a keyword or topic. The only thing missing is a high-level view of just the parts. So that's what we'll provide here:

Part I: Getting Started, Getting Secure: How you get started with Windows 8 depends on where you're coming from. This part covers all fronts. If you're an experienced Windows user, then you probably want to know what's new. Chapter 1 covers that turf. If you're relatively new to PCs, you'll likely be interested in learning the most important basic skills for using Windows 8 on a computer or mobile device. Chapters 2–4 cover that ground. Chapters 5 and 6 cover important "getting started" topics for everyone. Chapters 7 and 8 provide solutions to common problems with getting started.

Part II: Security and Updates: There is no such thing as a 100-percent secure computer. Even with all of its advanced built-in security, there are certain things that you, the user, need to contribute to make sure that your computer is safe and stays up-to-date with ever-changing security threats. The chapters in this part cover that ground.

Part III: Personalizing Windows 8: We all like to tweak things to suit our personal needs, taste, and style. That's what this part is all about. But it's not just about changing the look and feel of things. It's about really making the computer a useful tool for whatever your work (or play) requires.

Part IV: Beyond the Desktop: Just about everyone who uses a computer also uses the Internet. And Windows 8 has many tools to make that possible. The chapters in this part cover chat and other social networking features, using computers remotely, and synchronizing your data in the cloud.

Part V: Pictures, Music, and Movies: The Internet isn't the only place to have fun with a computer. You can have a lot of fun offline with pictures, music, and movies. The chapters in this part tell you how.

Part VI: Managing Your Content: We all have to make some effort to get our stuff organized and keep it organized. Otherwise, we spend more time looking for stuff than actually doing things. This part covers all the necessary housekeeping kinds of chores to help you spend less time looking for things and more time doing things.

Part VII: Printing, Faxing, and Scanning: Sometimes, you just have to get a thing off the screen and onto paper. That's what printing is all about. Sometimes, you need to get a thing off of paper and into the computer. That's what scanning is about. And sometimes you have to use a fax machine rather than e-mail to get a printed page to someone. Such are the topics of VII.

Part VIII: Installing and Removing Programs: Hot topics here include downloading programs, installing programs from CDs and flash drives, getting older programs to run, controlling access to programs, getting rid of unwanted programs, and dealing with problem programs and processes. After all, what good is a computer without some programs to run on it?

Part IX: Hardware and Performance Tuning: Hardware is the computer buzzword for physical gadgets you can hold in your hand. As the years roll by, hardware just keeps getting smaller, better, faster, cheaper, and, well, cooler. This part covers everything you need to know about adding and removing hardware and troubleshooting hardware problems.

Part X: Networking and Sharing: Whether you have two PCs or twenty, eventually you'll want to link them all together into a single private network so they can share a single Internet account and printer, or perhaps several printers. And if you've been wasting time transferring files via CDs or some other removable disk, you'll want to replace all that with simple drag-and-drop operations on your screen. This part tells you how to make all of that happen.

That's a lot of topics and a lot to think about. But there's no hurry. If you're new to Windows, or your experience is limited to things like e-mail and the web, Chapters 2 and 4 are probably your best first stop. Those of you with more extensive Windows experience might want to hop over to Chapter 1 for a quick look at things that are new in Windows 8.

Part I

Getting Started, Getting Secure

IN THIS PART

Chapter 1
What's New in Windows 8

Chapter 2
Navigating the Windows 8 Interface

Chapter 3
Windows 8 on Mobile Devices

Chapter 4
Getting Around the Windows Desktop

Chapter 5
Sharing and Securing with User Accounts

Chapter 6
Using Windows 8 Family Safety

CHAPTER 1

What’s New in Windows 8

IN THIS CHAPTER

- New platforms
- The Windows 8 Interface
- The Windows store
- Cloud synchronization
- Messaging
- Other new features

In some ways, Windows 8 is a radical departure from Windows 7, as well as the other versions of Windows that preceded it. In other ways, Windows 8 isn’t much different from Windows 7. Both possibilities are good ones, both from a technology standpoint and for the user. The differences mean an expanded set of features, richer experience, broader platform support, performance improvements, and much more. The similarities mean that if you are familiar with previous versions of Windows, you can put Windows 8 to work right away without a steep learning curve.

In this chapter, we focus not on those familiar features, but rather on many of the new and changed features in Windows 8. You’ll find an overview here of those features, with deeper explanation in other chapters. We can’t cover every new feature here, but we hope to give you a good overview of the key features and conceptual changes introduced in Windows 8.

So, whip out that new Windows 8 tablet or PC, start reading, and start taking advantage of the great new features that Windows 8 has to offer.

New Platforms

One of the most significant additions to Windows 8 is its support for platforms other than the traditional PC. Windows 8 moves beyond the Intel and AMD x86 processor family to support System on a Chip (SoC) devices from both the x86 and ARM architectures. ARM, which stands for Advanced RISC Machine, was developed by the company now known as ARM Holdings. Although you might never have heard of them, ARM processors are found extensively in consumer electronics devices, including tablets, cell phones, MP3 players, gaming consoles, computer peripherals, and much more.

While the traditional PC portable form factor continues to shrink with ultra-light tablets and notebooks, SoC support for Windows 8 generally means the capability to provide a Windows experience on small form-factor tablets, cell phones, and smaller handheld devices, in addition to the generally larger (albeit typically more powerful) traditional PC platforms. For ARM devices, the result is a new opportunity for device manufacturers to provide a new selection of handheld devices running a Windows operating system (dubbed Windows on ARM, or WOA) with support for applications like those in the Microsoft Office suite.

For users, it means a consistency of user experience across a broad range of devices. For example, your experience could be largely the same between your notebook, your tablet, and your cell phone. Support for ARM also opens up some interesting possibilities for embedding Windows in a vast array of consumer electronic devices. It's quite likely that someday soon your TV will be running Windows and give you, for example, the same, consistent experience streaming movies on your TV as on your PC.

An important distinction to understand about the ARM platform, however, is that applications written for your desktop PC or notebook won't necessarily run on an ARM device. For example, none of the applications in existence today, built for the x86 Windows 7 and earlier operating systems, will work on ARM-based devices. However, that roadblock doesn't exist for Windows 8–specific applications.

Microsoft's Visual Studio development environment makes it relatively easy to compile an ARM version of an application at the same time you compile one for the x86 platform. This means that developers can create one code set for their application and publish it for both platforms. When you download an application from the Windows Store, that app will run on the Windows 8 "traditional" devices as well as ARM-based Windows 8 devices. You can install the app on up to five devices in any mix of x86- and ARM-based devices. The app will provide the same experience on all of them.

What about Office applications, you ask? Excellent question! Microsoft includes four Office applications with WOA devices, including Word, Excel, PowerPoint, and OneNote. These versions of the Office applications do not provide the same level of features as the regular version, but provide a means for users to work with their data across multiple types of devices. For example, if you sync your OneNote notebooks to SkyDrive, you can view them in OneNote on your WOA device. Or, when someone e-mails you a spreadsheet as an attachment, you can view it in Excel on the WOA device.

The Windows 8 Interface

As with many previous versions of Windows, Windows 8 introduces a new user interface. Unlike previous versions, however, Windows 8's new interface is radically different from what we've come to know as the "traditional" Windows user interface. Clearly designed with the tablet and handheld market in mind — at least in large part — Windows 8 gives you a simplified, clean user experience with tiles providing access to applications.

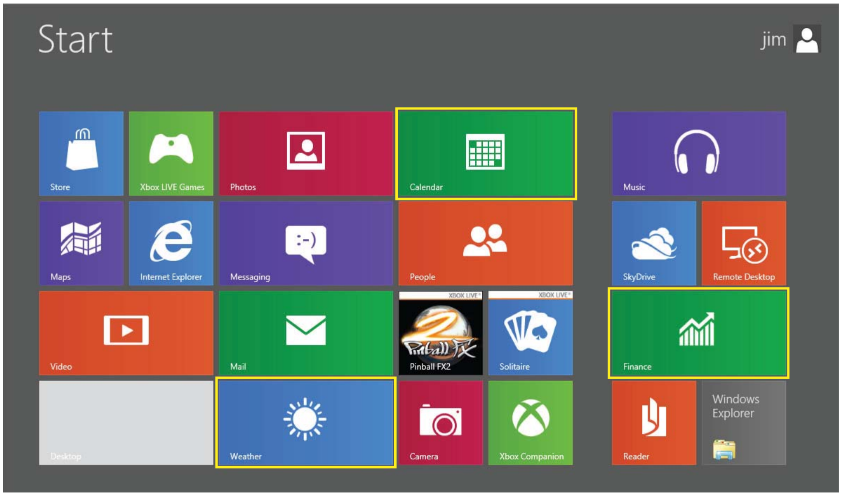
NOTE
The Windows 8 UI look isn't just about tablets and small form-factor devices. To Microsoft, the new UI is really as much an aesthetic concept as it is a user interface. It's about uncluttering the desktop, websites, and PowerPoint decks almost as much as it's about uncluttering the Windows user interface.

The Start screen

Figure 1.1 shows the Windows 8 Start screen, a key component of the new Windows 8 interface. You'll learn how to navigate the new Windows 8 interface in Chapter 2. For now, understand that the tiles on the Start page, like icons on the traditional Windows desktop, give you quick access to your programs and documents. Tap the Internet Explorer tile, for example, and Internet Explorer opens. Likewise, click or tap the Photos tile, and the Photos app opens, enabling you to view the photos stored on your computer, or in SkyDrive, Facebook, Flickr, and other locations.

FIGURE 1.1

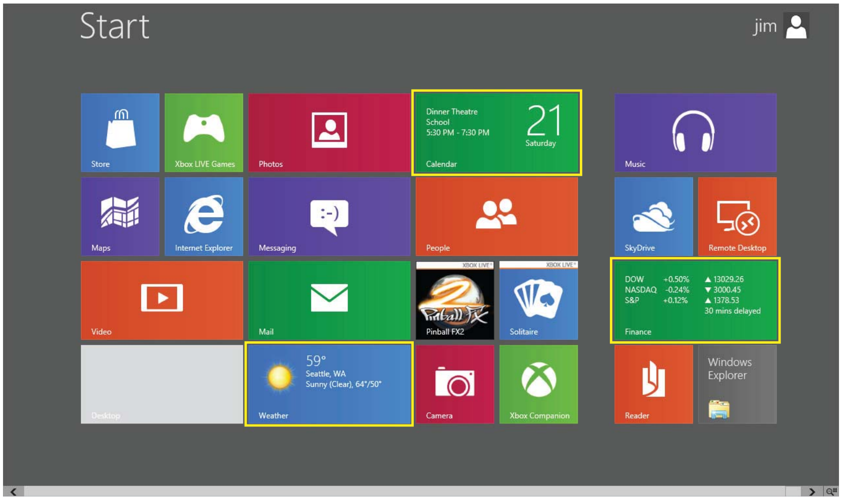
The Windows 8 Start screen


Start
jim
Store
Xbox LIVE Games
Photos
Calendar
Music
Maps
Internet Explorer
Messaging
People
SkyDrive
Remote Desktop
Video
Mail
XBOX LIVE
Pinball FX2
XBOX LIVE
Solitaire
Finance
Desktop
Weather
Camera
Xbox Companion
Reader
Windows Explorer

A key difference between Windows 8 tiles and desktop icons, however, is that tiles can be live, showing data that changes dynamically. The Mail tile, for example, shows a preview of new messages in your Inbox (see Figure 1.2). The Calendar tile shows a preview of meetings and events in your Calendar, the Finance tab shows stock prices, and so on. The advantage is that the tiles can give you information at a glance that you would otherwise have to open a program to view.

FIGURE 1.2

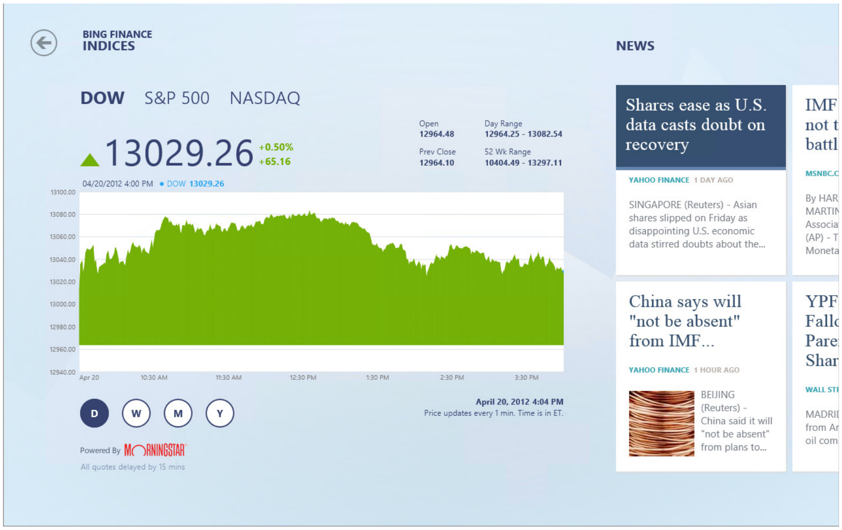
Live tiles show dynamic data.


Start
jim
Store
Xbox LIVE Games
Photos
Dinner Theatre
School
5:30 PM - 7:30 PM
21
Saturday
Calendar
Music
Maps
Internet Explorer
Messaging
People
SkyDrive
Remote Desktop
Video
Mail
XBOX LIVE
Pinball FX2
XBOX LIVE
Solitaire
DOW +0.50% ▲13029.26
NASDAQ -0.24% ▼3000.45
S&P +0.12% ▲1378.53
30 mins delayed
Finance
Desktop
59°
Seattle, WA
Sunny (Clear), 64°/50°
Weather
Camera
Xbox Companion
Reader
Windows Explorer

The Windows 8 UI isn't just about the Start page or its tiles, however. Windows 8 apps generally follow the same clean, streamlined look as the Windows 8 interface itself. For example, Figure 1.3 shows the Finance application. There is no window border, no controls in the title bar, and no visible menu. While a Windows 8 app can include any number of interface features specific to the application, in general the interface will be simple and streamlined like the Finance app, if not more so.

FIGURE 1.3

A Windows 8 app typically has a clean, simplified interface.


BING FINANCE
INDICES
NEWS
DOW
S&P 500
NASDAQ
Open
12964.48
Day Range
12964.25 - 13082.54
Prev Close
12964.10
52 Wk Range
10404.49 - 13297.11
▲13029.26
+0.50%
+65.16
04/20/2012 4:00 PM
DOW 13029.26
13100.00
13080.00
13060.00
13040.00
13020.00
13000.00
12980.00
12960.00
12940.00
Apr 20
10:30 AM
11:30 AM
12:30 PM
1:30 PM
2:30 PM
3:30 PM
D
W
M
Y
Powered By MORNINGSTAR
IMF
not t
battl
MSNBC.C
By HAR
MARTIN
Associa
(AP) - T
Moneta
YPF
Fallo
Pare
Shar
WALL STR
MADRID
from Ar
oil com

April 20, 2012 4:04 PM
Price updates every 1 min. Time is in ET.

All quotes delayed by 15 mins

Shares ease as U.S. data casts doubt on recovery

YAHOO FINANCE 1 DAY AGO

SINGAPORE (Reuters) - Asian shares slipped on Friday as disappointing U.S. economic data stirred doubts about the...

China says will "not be absent" from IMF...

YAHOO FINANCE 1 HOUR AGO

BEIJING (Reuters) - China said it will "not be absent" from plans to...

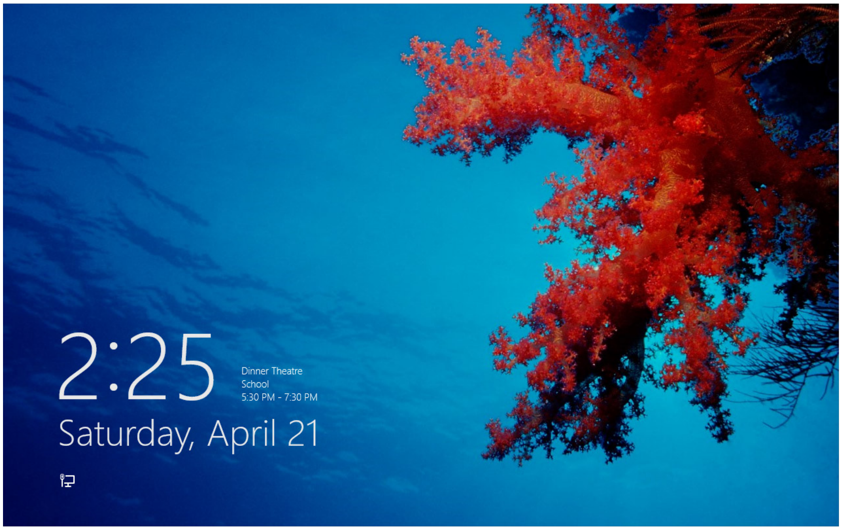
Although the Windows 8 interface is a departure from the traditional Windows desktop, the combination of live tiles, clean look, and capability to put your most frequently used apps and documents in one area for quick access makes Windows 8 a winner, particularly for tablets and handheld devices.

The Lock Screen

The Windows 8 Lock Screen appears when the computer is locked (see Figure 1.4). The Lock Screen shows the current day and time, battery status, and network status, all on a photo background. The Lock Screen can also display notifications from applications. To display the logon screen, slide the Lock Screen up.

FIGURE 1.4

The Lock Screen

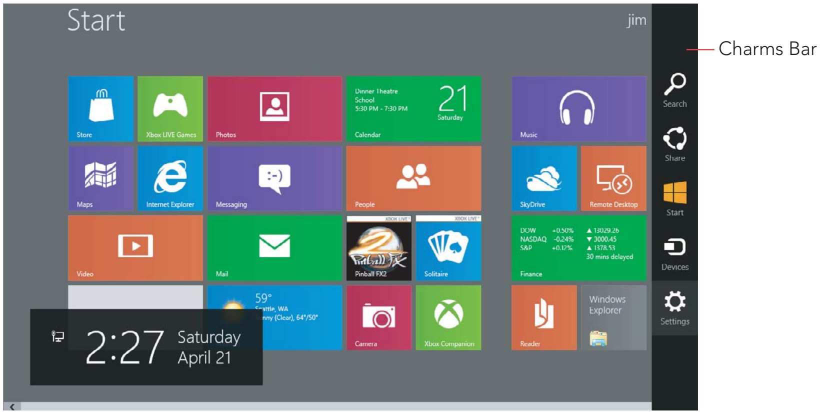


The Charms Bar

The Charms Bar appears at the right edge of the display (see Figure 1.5) when you move the mouse to the bottom-right or upper-right corner of the display. You can also display the Charms Bar by swiping in from the right edge of the display.

FIGURE 1.5

The Charms Bar


Start
jim
Charms Bar
Search
Share
Start
Devices
Settings
Store
Xbox LIVE Games
Photos
Dinner Theatre
School
5:30 PM - 7:30 PM
21
Saturday
Calendar
Music
Maps
Internet Explorer
Messaging
People
SkyDrive
Remote Desktop
Video
Mail
Pinball FX2
Solitaire
Finance
59°
Camera
Xbox Companion
Reader
Windows Explorer
2:27
Saturday
April 21

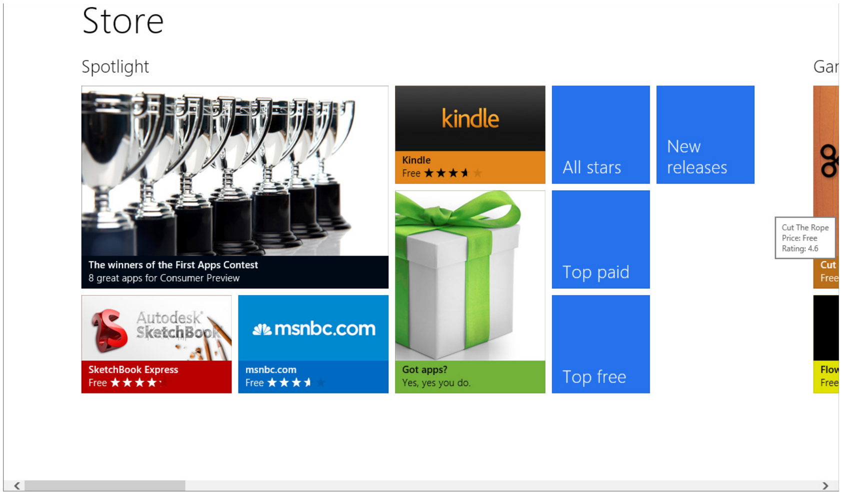
The Charms Bar gives you quick access to Search, Settings, and other options and features.

The Windows Store

If you're familiar with the iPad, iPod, or Android devices (not to mention a handful of other types), you're familiar with the concept of an app (application) store. As you might expect, given Windows 8's expansion in the tablet and handheld market, Windows 8 adds its own app store, called the Windows Store, shown in Figure 1.6.

FIGURE 1.6

The Windows Store


Store
Spotlight
The winners of the First Apps Contest
8 great apps for Consumer Preview
kindle
Kindle
Free
All stars
New releases
Top paid
Top free
Autodesk SketchBook
SketchBook Express
Free
msnbc.com
msnbc.com
Free
Got apps?
Yes, yes you do.
Cut The Rope
Price: Free
Rating: 4.6

The great thing about the Windows Store, like its counterparts for other devices and platforms, is quick access to a vast collection of applications from games to productivity tools to multimedia apps. As long as your device is connected to the Internet, you can open the Windows Store, browse for and quickly locate the app you need, and typically, in less than a minute, have the app installed and running on your device. Many apps are free; others have some cost. Many give you the capability to try the app for free before you buy it.

Cloud Synchronization

With the likelihood that many people will have multiple Windows 8 devices, it's no surprise that Windows 8 introduces some great cloud-synchronization features. For example, Windows 8 can integrate with your Windows account (formerly called Windows Live accounts) and SkyDrive to give you access to documents and photos from multiple devices. You can save, open, and view files from SkyDrive from a variety of devices, including a Mac or iPad, your Windows Phone, or your iPhone.

Many Windows 8 applications integrate with SkyDrive directly. For example, the Photos app not only lists the photos you have on your computer, but also those in SkyDrive (as well as Facebook and Flickr). If you have a domain account, you can associate your domain account with your Windows account and enjoy that same cloud experience.

Other applications also support SkyDrive. For example, you can get a free OneNote app for your Windows Phone, iPhone, or Android device that enables you to view OneNote notebooks that are synced to SkyDrive. So, if you create a note on your PC, it can automatically sync to SkyDrive, and from there it can be viewed from your mobile phone. This is a great feature for taking your work notes, shopping list, or other notes with you wherever you go.

TIP

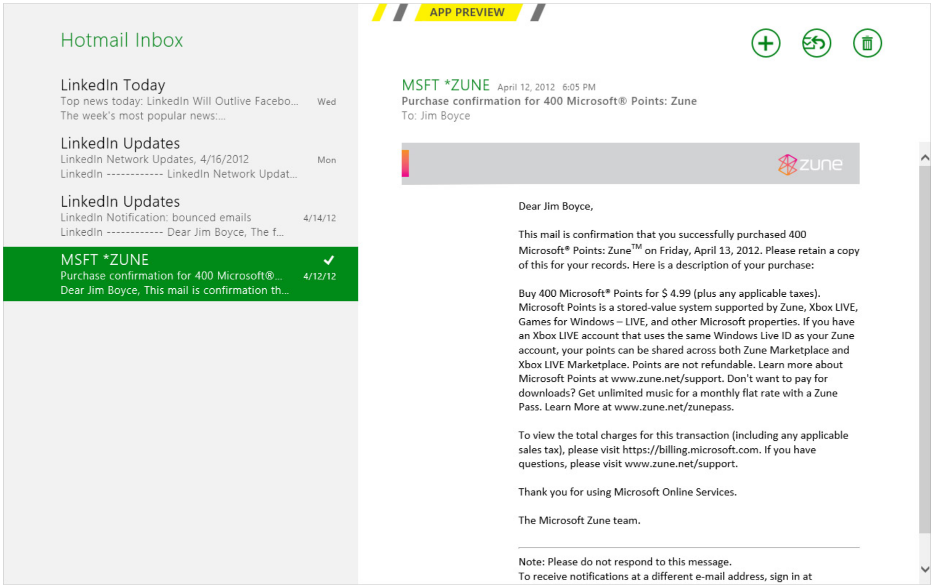
Office Web Apps, introduced with SharePoint Server 2010, are included with SkyDrive, enabling you to view and edit Word, Excel, OneNote, and PowerPoint documents from a web browser without having Office installed on a device.

Integrated Messaging

A lot of great new apps are included with Windows 8, but one deserves particular mention here. The new Mail app included with Windows 8 combines a sleek interface with the capability to integrate e-mail accounts into a unified mailbox (see Figure 1.7). Bringing all of your mail into one app can be a great timesaver and can eliminate the need for multiple mail applications or the need to open multiple web browsers to check your mailboxes.

FIGURE 1.7

The Mail app



LinkedIn Today
Top news today: LinkedIn Will Outlive Facebo… Wed
The week's most popular news:…

LinkedIn Updates
LinkedIn Network Updates, 4/16/2012 Mon
LinkedIn ------------ LinkedIn Network Updat…

LinkedIn Updates
LinkedIn Notification: bounced emails 4/14/12
LinkedIn ------------ Dear Jim Boyce, The f…

MSFT *ZUNE ✓
Purchase confirmation for 400 Microsoft®… 4/12/12
Dear Jim Boyce, This mail is confirmation th…

MSFT *ZUNE April 12, 2012 6:05 PM
Purchase confirmation for 400 Microsoft® Points: Zune
To: Jim Boyce

Dear Jim Boyce,

This mail is confirmation that you successfully purchased 400 Microsoft® Points: Zune™ on Friday, April 13, 2012. Please retain a copy of this for your records. Here is a description of your purchase:

Buy 400 Microsoft® Points for $ 4.99 (plus any applicable taxes). Microsoft Points is a stored-value system supported by Zune, Xbox LIVE, Games for Windows – LIVE, and other Microsoft properties. If you have an Xbox LIVE account that uses the same Windows Live ID as your Zune account, your points can be shared across both Zune Marketplace and Xbox LIVE Marketplace. Points are not refundable. Learn more about Microsoft Points at www.zune.net/support. Don't want to pay for downloads? Get unlimited music for a monthly flat rate with a Zune Pass. Learn More at www.zune.net/zunepass.

To view the total charges for this transaction (including any applicable sales tax), please visit https://billing.microsoft.com. If you have questions, please visit www.zune.net/support.

Thank you for using Microsoft Online Services.

The Microsoft Zune team.

Note: Please do not respond to this message.
To receive notifications at a different e-mail address, sign in at

NOTE

By default, Mail lets you connect to Hotmail, Google, and Exchange accounts.

Social Networking Integration

Although there is some speculation that social networking sites are a fad that could go away in several years, they are certainly here today. Windows 8 provides social network integration in a handful of ways to make it easier for you to work with your friends and contacts across those services.

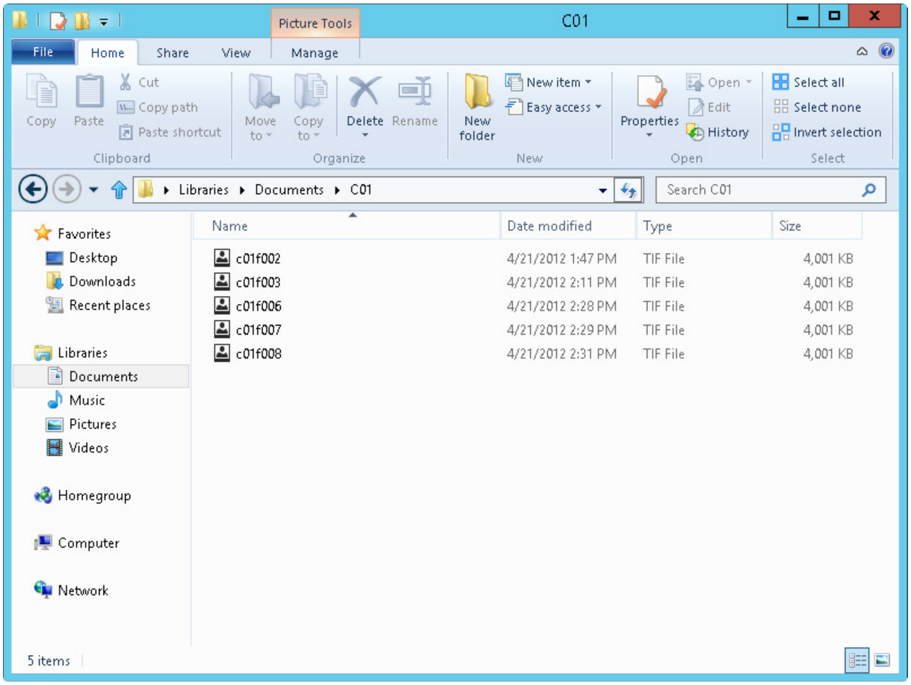
For example, the People app lets you integrate contact information from Hotmail (Windows Live), LinkedIn, Twitter, Exchange, and Google. So, all of your contacts from all of those services can appear in the People app. The People app also provides social updates about your friends within the People app, so you can, for example, see what status updates your friends have posted on Facebook.

File Explorer

The ribbon interface made its appearance in Office 2007 and, since then, has expanded in Office 2010 and SharePoint 2010. Now, you'll find the ribbon interface in File Explorer. Figure 1.8 shows an example of an Explorer window's ribbon.

FIGURE 1.8

The ribbon interface in Explorer


Picture Tools
C01
File
Home
Share
View
Manage
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Libraries
Documents
C01
Search C01
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Network
5 items

Name	Date modified	Type	Size
c01f002	4/21/2012 1:47 PM	TIF File	4,001 KB
c01f003	4/21/2012 2:11 PM	TIF File	4,001 KB
c01f006	4/21/2012 2:28 PM	TIF File	4,001 KB
c01f007	4/21/2012 2:29 PM	TIF File	4,001 KB
c01f008	4/21/2012 2:31 PM	TIF File	4,001 KB

As you might expect, the ribbon in Explorer groups commands for working with and sharing files and folders, changing how items display in the window, and in the case of media files, gives you commands you can use to play the files.

TIP

You can click the up arrow near the top right of the ribbon to minimize it. The arrow changes to a down arrow which, when clicked, expands the ribbon.

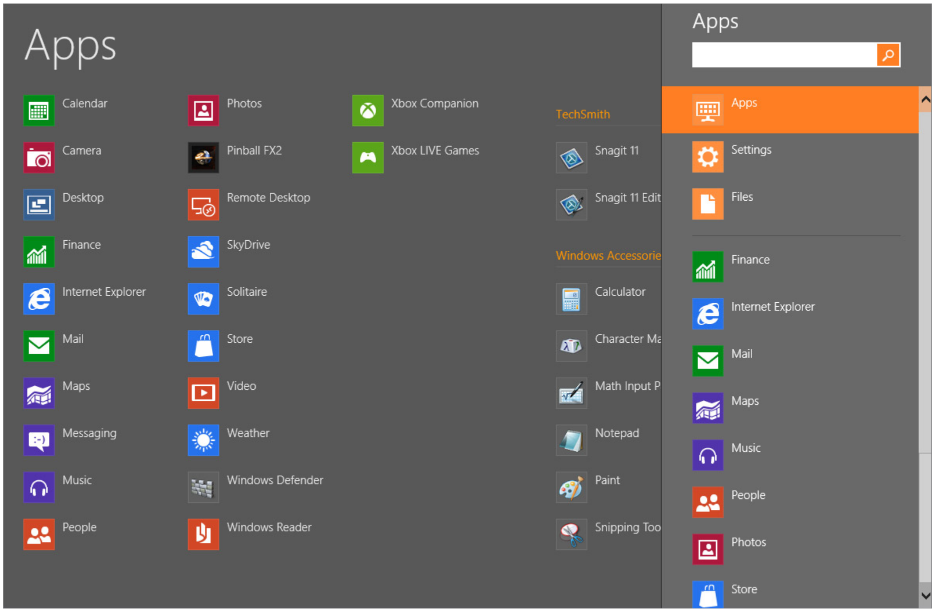
Another great addition in File Explorer is the capability to easily mount CD images and virtual hard drive images right in Explorer. Once you mount an ISO image, for example, the image appears in File Explorer as CD, just as if you had a physical CD inserted in your CD drive. Although you could mount these images in Windows 7, File Explorer makes it much easier.

Search

Windows 7 integrated search within the operating system to enable you to quickly locate files, e-mail messages, and other items on your computer. Windows 8 enhances that dynamic search capability and adds a great new interface for search that categorizes results. Figure 1.9 shows an example of a search in Windows 8 Search.

FIGURE 1.9

The new Windows 8 Search screen showing results for Apps


Apps
Calendar
Camera
Desktop
Finance
Internet Explorer
Mail
Maps
Messaging
Music
People
Photos
Pinball FX2
Remote Desktop
SkyDrive
Solitaire
Store
Video
Weather
Windows Defender
Windows Reader
Xbox Companion
Xbox LIVE Games
TechSmith
Snagit 11
Snagit 11 Edit
Windows Accessorie
Calculator
Character Ma
Math Input P
Notepad
Paint
Snipping Too
Apps
Apps
Settings
Files
Finance
Internet Explorer
Mail
Maps
Music
People
Photos
Store

Search categorizes your search results so you can quickly find the item you're looking for. The categories are listed on the right, and clicking on a category displays the results for that category at the left. By default, the App category is selected, so Search automatically shows all apps on your computer. To find a specific app, document, e-mail, or other item, just type an appropriate search word or term in the text box. Then, click a category to view the items in that category that meet your search criteria.

You can use natural language query syntax, such as "Find all files where the filename starts with Goober and the size is greater than 10MB." You can also use the Advanced Query Syntax (AQS) available in Windows 7 to search, such as `filename:Goober size:>10MB`.

Spell Check and AutoCorrect

Windows 8 extends spell check across the operating system to any application that uses standard text controls. This means, for example, that you can use spell check in Lync or other applications that don't have their own spell check feature. In addition, Microsoft is adding spell check to Internet Explore 10 across all platforms, which means spell check will be available on IE 10 running on Windows 7.

Enterprise Features

Windows 8 includes a selection of features that will only be available to enterprise users via the Windows 8 Enterprise edition. This section explores the major features that are exclusive to Windows 8 Enterprise.

Windows to Go

Windows to Go enables you to boot and run Windows 8 from a USB flash drive. This means you can take your operating system, applications, and documents with you from one device to another. This capability also offers administrators a means of restricting access for specific types of users, such as contingent workers, consultants, or visitors.

DirectAccess

DirectAccess allows remote users to access the corporate network without the need for a Virtual Private Network (VPN) connection. Unlike a VPN connection, which the user must establish manually, DirectAccess establishes a bi-directional connection automatically for the user. The result is that users can gain access quickly and simply to internal network resources such as messaging services, file servers, printers, collaboration tools like SharePoint, and more. Think of DirectAccess as an automatic VPN that just happens for the user; users don't need to do anything to initiate the secure connection to the corporate network. DirectAccess authenticates the computer, which means the computer can connect to the network before the user logs on. DirectAccess can also authenticate the user and supports two-factor authentication using smart cards. The end result is a very seamless VPN experience for users, with simplified deployment and management for the IT team.

BranchCache

BranchCache in Windows Server 2012 and in Windows 8 caches web, file, and other application content, enabling users to access that cached content locally from the LAN rather than retrieve it from the WAN. BranchCache, therefore, can potentially eliminate a large amount of external network traffic, which can be particularly important for organizations with relatively low-bandwidth WAN links. For security, BranchCache encrypts the content both on the caching server(s) and client computers.

AppLocker

AppLocker enables administrators to control which applications and processes users can run on their computers, including executable files, Windows Installer files, DLLs, scripts, packaged applications, and packaged application installers. Controlling applications in this way can improve security and adherence to processes by blocking unapproved applications and ensuring licensing compliance, and also helping to ensure process compliance. Administrators can define rules based on attributes such as application publisher, product name, filename, version, and others. Rules can be assigned to individuals as well as security groups, providing flexibility and the ability to implement exceptions.

VDI enhancements

Virtual Desktop Infrastructure (VDI) provides the capability to deliver a desktop computing experience to users from virtual clients running in a datacenter. The VDI features in Windows 8 support a rich client desktop experience, including host-side rendering to support for graphics-intensive applications; GPU Virtualization, which enables multiple clients to share a Graphics Processing Unit (GPU) on the Hyper-V server; intelligent screen capture and compression to improve user graphics experience and reduce network bandwidth requirements; and USB device redirection. All of these features combine to enable a rich desktop user experience to a broad range of devices, including lower-cost devices.

Windows 8 app deployment

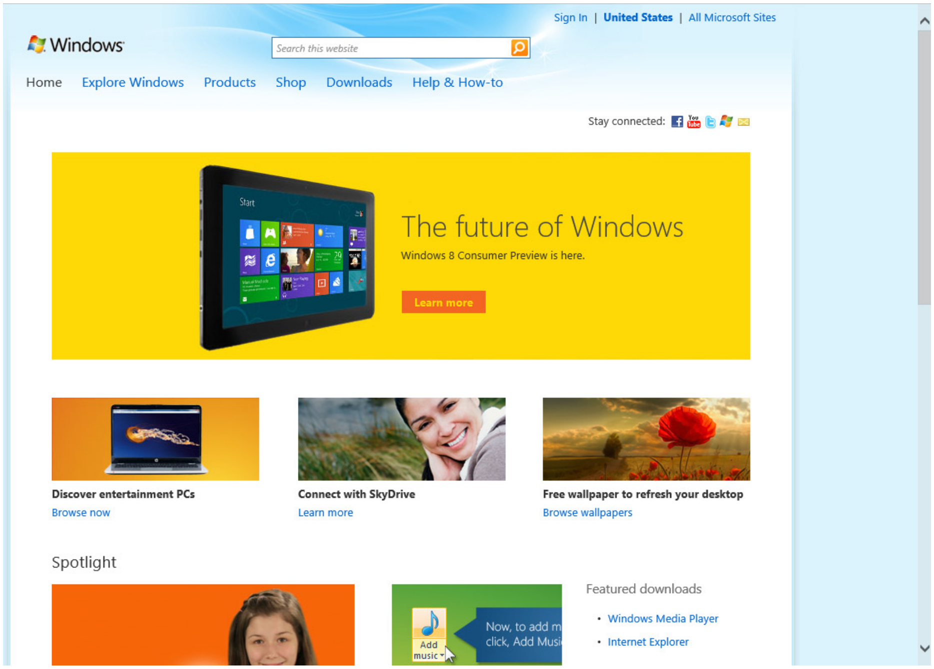
The Enterprise edition of Windows 8 includes the capability for PCs and tablets that are domain joined to side-load internal apps. This feature gives administrators an easy means for deploying these apps across the enterprise.

Internet Explorer 10

Windows 8 ships with Internet Explorer (IE) 10, the latest release in the IE family of web browsers. As you might expect, IE 10 comes in a Windows 8 UI flavor, as shown in Figure 1.10. The Windows 8 version sports the clean, minimalist look of other Windows 8 applications. It's also built for touch, enabling you to zoom in and out, browse forward and back, and manage the display in other ways with simple gestures, making it a great browser for tablets.

FIGURE 1.10

Internet Explorer 10's Windows 8 look


Sign In | United States | All Microsoft Sites
Windows
Search this website
Home
Explore Windows
Products
Shop
Downloads
Help & How-to
Stay connected:
The future of Windows
Windows 8 Consumer Preview is here.
Learn more
Discover entertainment PCs
Browse now
Connect with SkyDrive
Learn more
Free wallpaper to refresh your desktop
Browse wallpapers
Spotlight
Featured downloads
Windows Media Player
Internet Explorer

In addition to the streamlined look, IE 10 offers a broad range of other new features and enhancements. For example, IE 10 expands its support for HTML5, adds new CSS3 properties and JavaScript features for developers (along with other development additions), and provides great performance.

One thing you won't find in the Windows 8 version of IE 10 is support for add-ons. Microsoft is moving away from the add-on model and the performance and reliability challenges that add-ons can pose. Instead, Windows 8 IE relies on site developers to leverage HTML5 to build rich browsing experiences without the need for add-ons, and to use feature detection on their sites to determine what browser the user has and to deliver content accordingly.

If you do need a browser that supports ActiveX controls, Silverlight, Flash, and other add-ons, the desktop version of IE 10 included with Windows 8 gives you that capability. The desktop version is a click away in the Windows 8 version, making it easy to switch to the desktop with that site automatically loaded.

Client Hyper-V

Although not enabled by default, Windows 8 includes the Hyper-V client, enabling you to run virtual machines (VMs) within the Hyper-V platform. For example, you might run a VM of Windows XP to support an application that isn't compatible with later versions of Windows. Or, maybe you need to run Linux but don't want to dual-boot between them. Hyper-V on Windows 8 is a great solution.

Client Hyper-V on Windows 8 offers more capabilities and power than its predecessor, Virtual PC. Client Hyper-V supports both 32- and 64-bit client operating systems, although Client Hyper-V only runs on 64-bit PCs running the 64-bit version of Windows 8. It requires a minimum of 4GB of RAM on the host PC and processors that support Second Level Address Translation (SLAT), although most of today's PCs provide that support.

TIP

To enable Hyper-V on your computer, open the Programs And Features object in the Control Panel and click Turn Windows Features On or Off.

BitLocker

BitLocker has been around for a while, but Windows 8 improves performance and adds some new features for disk encryption. For example, when you turn on BitLocker to encrypt a drive, you have the option to only encrypt sectors on the drive that have data stored on them, rather than encrypting the entire drive. As space gets used on the drive, BitLocker encrypts that data. Windows 8 BitLocker also adds the capability to deploy Windows 8 to an encrypted state, rather than encrypting the drive after installation.

Additional Windows 8 BitLocker features include the capability for users to change the BitLocker PIN or password, with support for password and PIN complexity through group policy; a Network Unlock feature that enables automatic unlocking of operating system volumes at system reboot when those systems are connected to the corporate network; and support for Encrypted Hard Drives, which offload the encryption process to the storage controller on the hard drive.

Smart Cards

Windows 8 introduces a handful of features for smart card users and simplifies smart card deployment and management for administrators. For example, Windows 8 supports virtual smart cards (VSC) on systems that support the Trusted Platform Module (TPM). Virtual smart cards can be deployed to users' systems with no cost for physical cards.

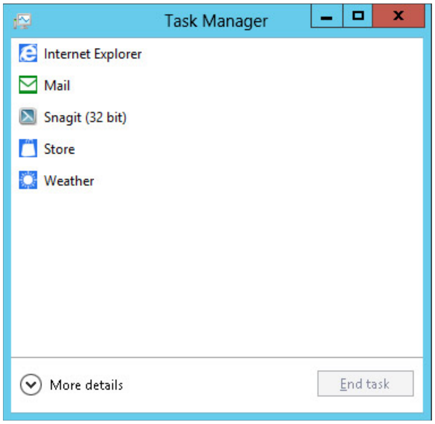
Other smart card changes in Windows 8 include improvements in the smart card sign-on process, making it easy for users to choose a different authentication option after they insert their smart card, and system-level changes for the way the Smart Card Service starts and stops, enabling the service to run only when it is needed, improving overall system performance.

Task Management

The Task Manager, which lets you view and managing running applications and processes, gets a facelift in Windows 8. The new Task Manager simplifies the default display to show only a list of running applications (see Figure 1.11). You can click an application in the list and click End Task to end it.

FIGURE 1.11

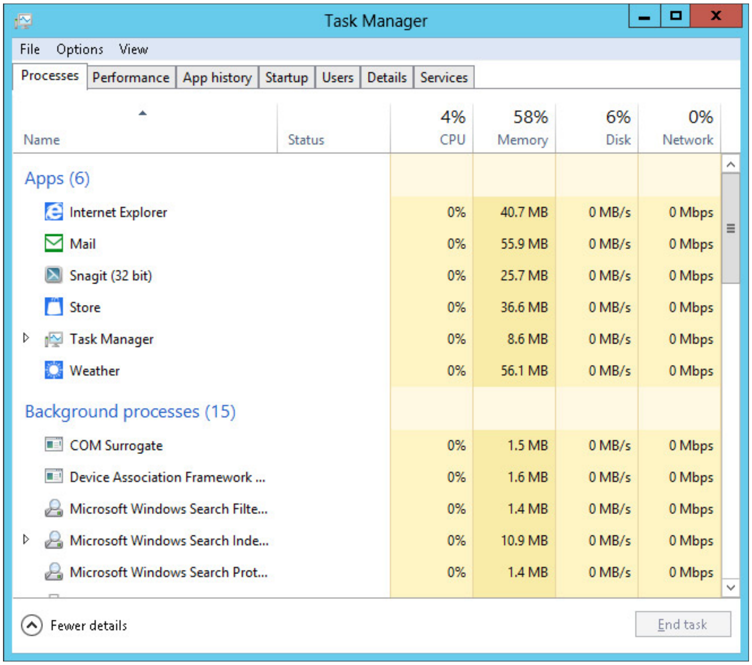
The Windows 8 Task Manager



If you want to see additional information about running applications and processes, click More Details to expand the Task Manager, as shown in Figure 1.12. This more-familiar interface provides multiple tabs to view performance data, application history, and other details.

FIGURE 1.12

Task Manager's expanded view



Name	Status	4% CPU	58% Memory	6% Disk	0% Network
Apps (6)					
Internet Explorer		0%	40.7 MB	0 MB/s	0 Mbps
Mail		0%	55.9 MB	0 MB/s	0 Mbps
Snagit (32 bit)		0%	25.7 MB	0 MB/s	0 Mbps
Store		0%	36.6 MB	0 MB/s	0 Mbps
Task Manager		0%	8.6 MB	0 MB/s	0 Mbps
Weather		0%	56.1 MB	0 MB/s	0 Mbps
Background processes (15)					
COM Surrogate		0%	1.5 MB	0 MB/s	0 Mbps
Device Association Framework ...		0%	1.6 MB	0 MB/s	0 Mbps
Microsoft Windows Search Filte...		0%	1.4 MB	0 MB/s	0 Mbps
Microsoft Windows Search Inde...		0%	10.9 MB	0 MB/s	0 Mbps
Microsoft Windows Search Prot...		0%	1.4 MB	0 MB/s	0 Mbps

Proximity and Wi-Fi Direct

Wi-Fi Direct is a peer-to-peer connectivity technology that allows Wi-Fi devices to interact directly with one another without going through a wireless access point/router. Wi-Fi Direct is a bit like Bluetooth, but with a stronger signal and further range.

One of the advantages to the capability for devices to detect one another (Proximity) through Wi-Fi Direct is that you can easily make connections to printers, headsets, and other devices that support Wi-Fi Direct. In addition, Windows 8 applications that support Wi-Fi Direct can discover and communicate with each other across devices easily. This capability opens up a broad range of new features and interesting scenarios for social networking, gaming, and data sharing.

Refresh/Reset

Windows 8 offers two features to help you restore your Windows 8 device to a known, good state. The first of these is Refresh Your PC, which reinstalls Windows 8 without losing your data, Windows 8 apps, and settings. Refresh Your PC also maintains your network and mobile broadband configurations, BitLocker settings, drive assignments, and so on. Refresh Your PC doesn't keep all of your applications, however. Although Windows 8 apps are retained, traditional Win32 applications are not. Refresh Your PC creates an HTML list on your desktop to let you know what applications were removed. The second feature is Reset Your PC, which reinstalls Windows 8, removing your data, apps, and settings (essentially, a complete reset to "factory condition").

Wrap-Up

There are literally thousands of changes in Windows 8 from previous versions of Windows, so this chapter naturally doesn't cover them all. Many of the bundled applications have been updated, new applications are added, the interface is changed (and not just for Windows 8 apps), and so on. You'll find explanations of many of these changes in the following chapters.

Because the interface potentially has the most impact on the way you use Windows and your Windows apps, that's the best place to start getting familiar with the changes in Windows 8. So, move on to Chapter 2 to learn how to navigate through and use the new Windows 8 interface.

CHAPTER

2

Navigating the Windows 8 Interface

IN THIS CHAPTER

Introducing the Windows 8 interface

Using the Start screen

Using the Charms Bar

Using the taskbar

Working with Windows 8 apps

Getting to the desktop

If you have been using previous versions of Windows for a while, you're no doubt familiar with the Windows desktop and how to work with Windows and Windows applications. Even so, you might find the Windows 8 interface very different. Gestures such as swipe, tap, tap and hold, slide, and so on might be foreign concepts. Fortunately, Windows 8 uses many of the same general gestures and actions you'll find on other touch-based devices. So, the Windows 8 interface should feel familiar to you.

If you don't have much experience with touch interfaces, this chapter will get you up-to-speed. You'll learn to navigate through the Windows 8 interface, use Windows 8 apps, and even get to that familiar Windows desktop! Armed with some basic concepts, you'll be navigating the Windows 8 interface like a pro in no time.

Introducing the Windows 8 Interface

The new interface introduced in Windows 8 represents a shift toward touch-based interaction with the operating system and applications, driven in large part by the growth of the tablet and handheld device markets. But the Windows 8 UI is not just about touch; it's also about simplification and putting data and applications within easy reach. As you grow comfortable using the Windows 8 interface, you'll no doubt come to appreciate both the simplicity of using it and its clean look.

Figure 2.1 shows the Windows 8 Lock screen, which you use to log into the device. Although Chapter 4 explains how to log in and out of Windows, we cover it briefly here. To log in, *slide* the display up. To slide on a touch device, move your finger from the bottom of the display toward the top. With a mouse, click anywhere on the Lock screen. Windows will display the list of user accounts available on the device (see Figure 2.2). Tap (touch or click) on a user tile to enter the password for that user account, and then press Enter or tap (or click) the arrow icon to the right of the password field.

FIGURE 2.1

The Windows 8 Lock screen

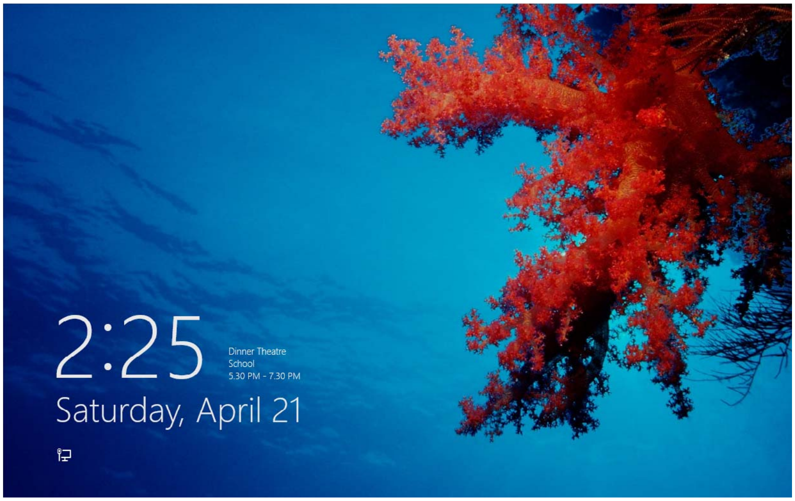
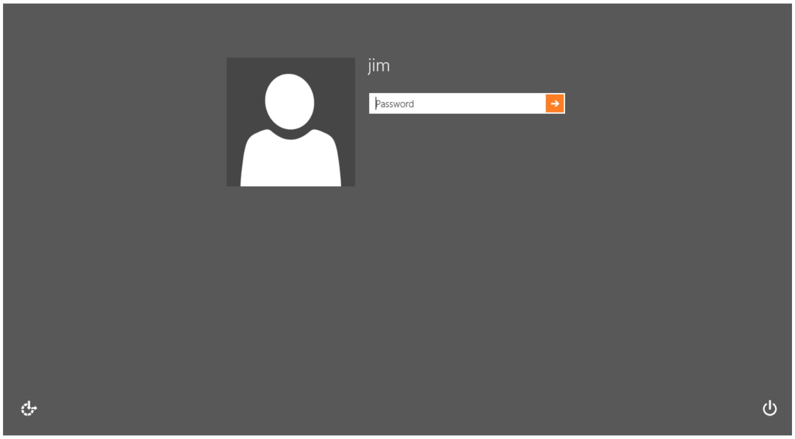


FIGURE 2.2

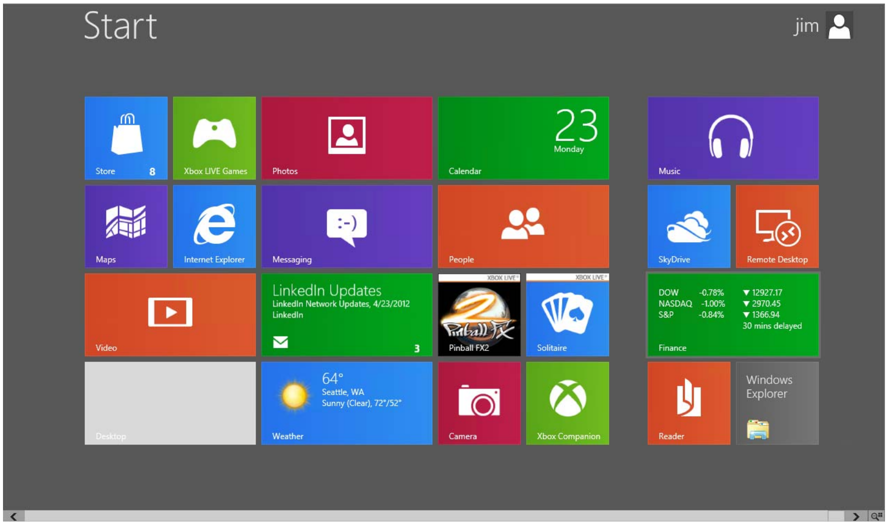
Choose an account with which to log in.



After you log on, you'll see the Windows 8 Start screen, shown in Figure 2.3. The Start screen serves much the same function as the Start menu in previous versions of Windows. Square or rectangular tiles give you quick access to apps, external resources such as SkyDrive, folders, and even the desktop.

FIGURE 2.3

The Windows Start screen


Start
jim
Store 8
Xbox LIVE Games
Photos
23
Monday
Calendar
Music
Maps
Internet Explorer
Messaging
People
SkyDrive
Remote Desktop
Video
LinkedIn Updates
LinkedIn Network Updates, 4/23/2012
LinkedIn
3
XBOX LIVE
Pinball FX2
XBOX LIVE
Solitaire
DOW -0.78% ▼ 12927.17
NASDAQ -1.00% ▼ 2970.45
S&P -0.84% ▼ 1366.94
30 mins delayed
Finance
Desktop
64°
Seattle, WA
Sunny (Clear), 72°/52°
Weather
Camera
Xbox Companion
Reader
Windows Explorer

The key goal for the design of the Windows 8 interface is simplicity. From the Start screen with its simple tile metaphor, to Windows 8 apps with no borders or traditional window elements such as menu bars and close buttons, the Windows 8 UI takes a minimalist approach to how you interact with Windows, your apps, and your data.

Before we dig deeper into the Windows 8 interface and its elements, let's take a look at the gestures and actions you'll use within the new interface.

Gestures and mouse actions

There are a handful of touch-based gestures you'll use with Windows 8, along with mouse-based alternatives for use on non-touch devices (or when you have a mouse connected to a touch device). The following list summarizes Windows 8 gestures, along with corresponding mouse actions.

- **Tap / Left-click:** Touch a finger to the object you want to select, and then remove your finger from the screen. With a mouse, left-click the object (point to it, click the left button, and then release the button).

- **Tap and hold / Click and hold:** Put a finger on the object you want to select, and hold your finger there. Tap and hold is typically followed by another gesture, such as sliding. For example, to relocate a tile on the Start screen, you tap and hold the tile, and after a checkmark appears at the top right of the tile, you can slide it to a new location. The equivalent mouse action for tap and hold is left-click and hold.
- **Swipe:** Slide your finger across the display, either left, right, up, or down. For example, to view the tiles at the right side of the Start screen if they are off-screen, swipe from right to left.
- **Slide (drag) / Click and drag:** After you have selected an object, you can slide it on the display. Tap and hold to select the object, and then simply slide your finger across the screen to move the object. The mouse equivalent is to click and drag the object.
- **Swipe from the edge of the screen inward:** There are a handful of tasks you can accomplish by swiping from the edge of the display in toward the middle of the screen. For example, swiping from the left edge lets you switch between apps. Swipe from the right edge to display the Charms Bar. Slide up from the bottom or down from the top to view options for the current app. The mouse equivalent varies depending on the task. To view options for the app, right-click the app. To open the Charms Bar, hold the mouse at the bottom right or top right of the screen.
- **Pinch:** Place two fingers on the screen and move them apart or towards each other to zoom in or out, respectively.

Using the Start Screen

Now that you know some basic gestures and their corresponding mouse actions, you're ready to start navigating around the Windows 8 interface, starting with the Start screen, previously shown in Figure 2.3. Use any of these actions to open the Start screen:

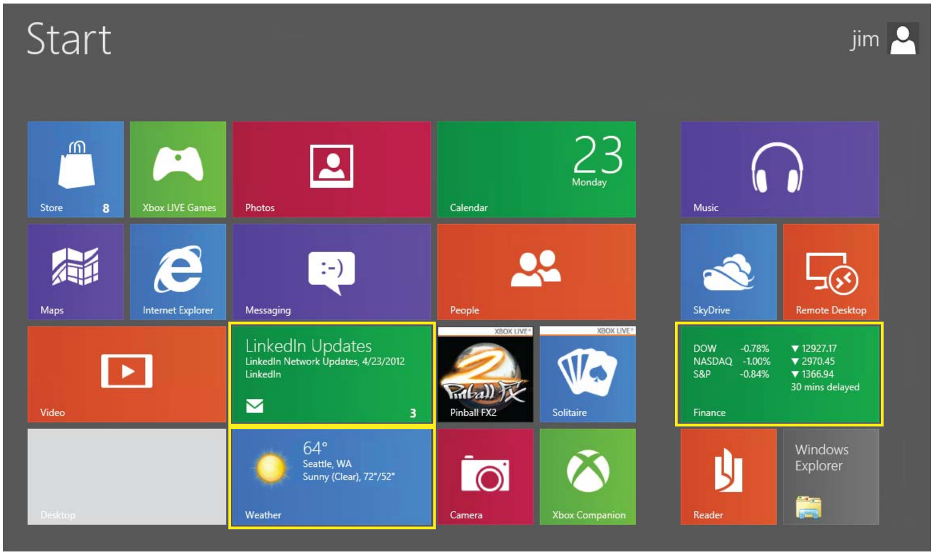
- Press the Windows key on the keyboard.
- Use the mouse to place the cursor at the bottom-left corner of the screen, and then click on the resulting Start screen icon.
- Open the Charms Bar and tap the Start charm.
- Press Windows+Tab to open the Task Switcher and select the Start icon.

To move around the Start screen on a touch device, simply swipe the display left or right to view additional tiles. Then, tap a tile to open its associated app. Or, in the case of the Desktop tile, tap the tile to open the Windows 8 desktop.

You'll find that tiles on the Start screen can be *live*, meaning they can dynamically display information. For example, after you add an account to the Mail app, it will show a preview of messages in your Inbox. The Weather tile is also live; it shows the current weather conditions (assuming your device is connected to the Internet). Other tiles show similar dynamic data. Figure 2.4 shows some examples of live tiles.

FIGURE 2.4

Live tiles on the Windows Start screen


Start
jim
Store 8
Xbox LIVE Games
Photos
23
Monday
Calendar
Music
Maps
Internet Explorer
:-)
Messaging
People
SkyDrive
Remote Desktop
Video
LinkedIn Updates
LinkedIn Network Updates, 4/23/2012
LinkedIn
3
XBOX LIVE
Pinball FX2
XBOX LIVE
Solitaire
DOW -0.78% ▼ 12927.17
NASDAQ -1.00% ▼ 2970.45
S&P -0.84% ▼ 1366.94
30 mins delayed
Finance
Desktop
64°
Seattle, WA
Sunny (Clear), 72°/52°
Weather
Camera
Xbox Companion
Reader
Windows Explorer

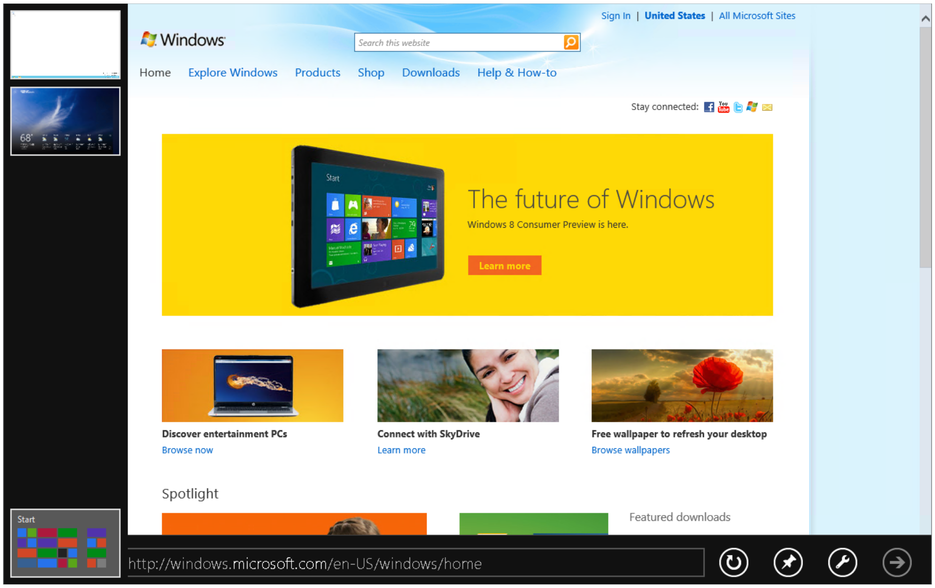
If you are working in an app or on the desktop and want to return to the Start screen, the easiest method is to push the device's Windows button. On a device without a Windows button (such as a PC with a traditional keyboard), press the Windows key on the keyboard. You can also hold the mouse in the bottom-left corner of the screen until the Start screen icon appears (see Figure 2.5), and then click the icon to return to the Start screen.

TIP

On a touch device, swipe from the left edge of the screen, hold, and then move slowly back to the left to display a graphic list of the running applications, as shown in Figure 2.5). Then, tap the Start screen icon to open the Start screen. Or, tap another icon to return to the associated app. You can also open the Charms Bar and tap the Start icon.

FIGURE 2.5

Switch between apps or access the Start screen icon.


Sign In | United States | All Microsoft Sites
Windows
Search this website
Home
Explore Windows
Products
Shop
Downloads
Help & How-to
Stay connected:
The future of Windows
Windows 8 Consumer Preview is here.
Learn more
Discover entertainment PCs
Browse now
Connect with SkyDrive
Learn more
Free wallpaper to refresh your desktop
Browse wallpapers
Spotlight
Featured downloads
Start
http://windows.microsoft.com/en-US/windows/home

Using the Charms Bar

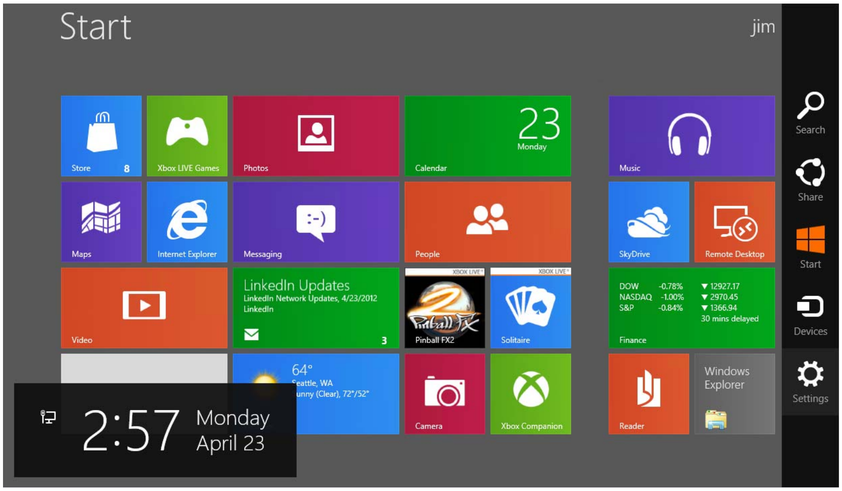
The Charms Bar, shown in Figure 2.6, gives you access to Devices, Settings, Search, sharing options, and the Start screen. To display the Charms Bar, swipe in from the right edge of the screen. Or, place the mouse at the bottom right or top right of the screen. When the Charms Bar appears, click on the charm you want to use. To close the Charms Bar, simply tap or click on any other area of the screen.

TIP

You can press Windows+C to open the Charms Bar.

FIGURE 2.6

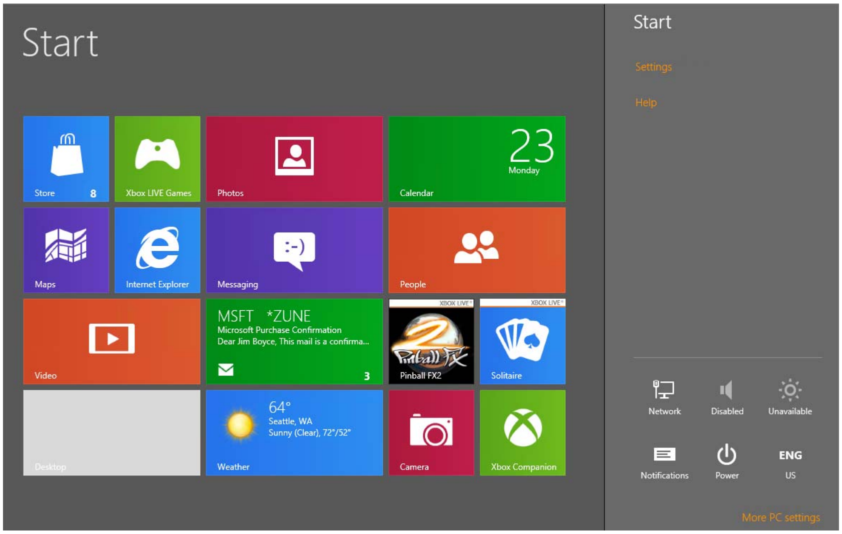
Access Settings and Devices with the Charms Bar.


Start
jim
Store 8
Xbox LIVE Games
Photos
23 Monday
Calendar
Music
Maps
Internet Explorer
Messaging
People
SkyDrive
Remote Desktop
Video
LinkedIn Updates
LinkedIn Network Updates, 4/23/2012
LinkedIn
3
Pinball FX2
Solitaire
DOW -0.78% ▼12927.17
NASDAQ -1.00% ▼2970.45
S&P -0.84% ▼1366.94
30 mins delayed
Finance
64°
Seattle, WA
Sunny (Clear), 72°/52°
Camera
Xbox Companion
Reader
Windows Explorer
2:57 Monday April 23
Search
Share
Start
Devices
Settings

Clicking Settings at the bottom of the Charms Bar opens a menu similar to the one shown in Figure 2.7. The top portion of the menu is in the context of the current app. For example, if you tap or click Devices with the Start screen displayed, you'll see menu items that pertain to the Start screen. If you have Internet Explorer open, you'll see settings for Internet Explorer. The menu behaves similarly for other apps, showing settings for that app.

FIGURE 2.7

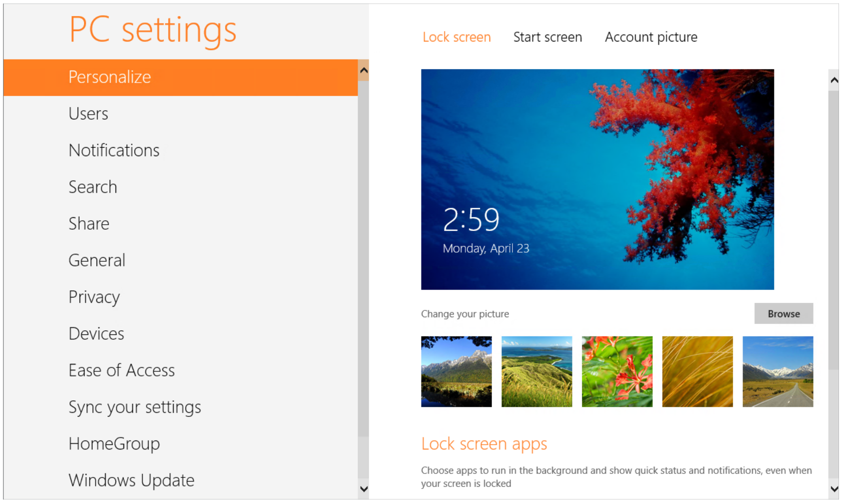
The Settings menu


Start
Store 8
Xbox LIVE Games
Photos
23 Monday
Calendar
Maps
Internet Explorer
Messaging
People
Video
MSFT *ZUNE
Microsoft Purchase Confirmation
Dear Jim Boyce, This mail is a confirma...
3
Pinball FX2
Solitaire
Desktop
64°
Seattle, WA
Sunny (Clear), 72°/52°
Weather
Camera
Xbox Companion
Start
Settings
Help
Network
Disabled
Unavailable
Notifications
Power
ENG
US
More PC settings

The bottom portion of the menu provides system-wide options, including the current network connection status, sound and brightness indicators, a Notifications icon that lets you turn on or off notifications, a Power icon for turning off or suspending the device, and a language icon for selecting the current language. You can click More PC Settings to open the new Windows 8 Control Panel, shown in Figure 2.8.

FIGURE 2.8

Use the PC Settings app to change a variety of settings.


PC settings
Personalize
Users
Notifications
Search
Share
General
Privacy
Devices
Ease of Access
Sync your settings
HomeGroup
Windows Update
Lock screen
Start screen
Account picture
2:59
Monday, April 23
Change your picture
Browse
Lock screen apps

Choose apps to run in the background and show quick status and notifications, even when your screen is locked

The items on the Charms Bar include the following:

- **Search:** Tap or click Search to open the Search screen, where you can search for apps, documents, and other items. See Chapters 29 and 30 for more details on using Search in Windows 8.
- **Share:** Tap or click Share to open the Share menu, which you can use to share content from the current app (if it supports sharing) to other apps. For example, if you open a website in IE and then open the Charms Bar and tap Share, the resulting menu enables you to e-mail a link and synopsis of the currently displayed page. A new mail page appears with the content already in the message, and all you have to do is enter an e-mail address and tap Send. You don't have to leave IE to share the content; it remains open while you create and send the e-mail.
- **Start:** Tap or click Start to open the Start screen.
- **Devices:** Tap or click Devices to open the Devices menu, where you can view and set options for devices such as secondary displays, printers, and other devices.
- **Settings:** Described earlier in this section, tapping or clicking Settings opens a Settings menu that lets you specify settings for the current app (or for Windows 8 in general, if the Start screen is open when you tap Settings).

Working with Windows 8 Apps

If you are working on a traditional PC with Windows 8 installed, some (potentially many) of your apps will be "traditional" Windows apps running on the desktop. But, as more and more Windows 8 apps are published, you'll no doubt have several favorite Windows 8 apps. On touch devices such as tablets and smaller handhelds, many of your apps will probably be Windows 8 apps.

In general, working with a Windows 8 app should be fairly intuitive. The gestures and actions you use to work with the Start screen and other Windows 8 screens are the same for apps. For example, to move back and forth between visited pages in IE, swipe left or right in the IE app.

Rather than focus on specific Windows 8 apps, this section of the chapter focuses on actions and methods you'll use in general to work with Windows 8 apps.

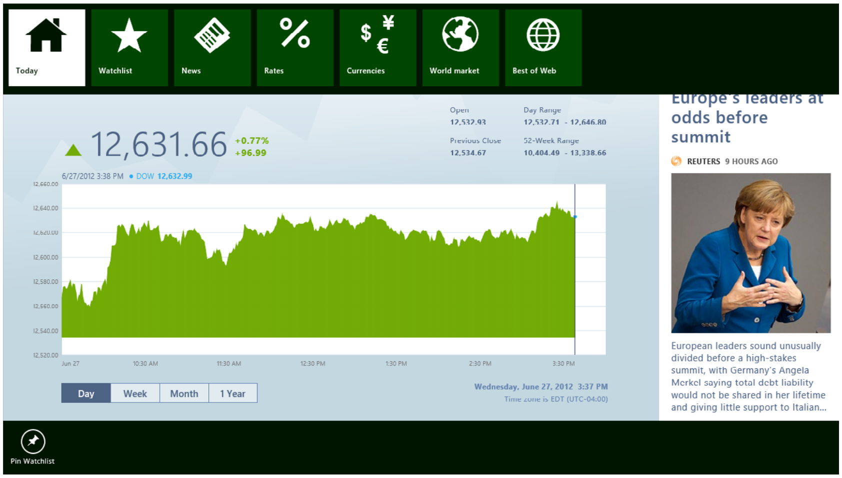
Opening and using a Windows 8 app

Opening a Windows 8 app couldn't really be any easier. Just open the Start screen, locate the app's tile, and tap or click the tile. If you are working on a non-touch device, and you have a mouse with a scroll wheel, you can use the wheel to scroll through the Start screen's tiles. Scroll down to move to the right, or scroll up to move to the left. Then, just click the tile for the app you want to open.

How you work in a Windows 8 app depends entirely on the app, but will rely on the standard touch gestures and mouse actions described earlier in this chapter. To open a Windows 8 app's app menu (see Figure 2.9), swipe up from the bottom or down from the top of the screen. Or, right-click in the app. The app menu offers options for the current app.

FIGURE 2.9

Use an app's menu to configure the app or set options.


Today
Watchlist
News
Rates
Currencies
World market
Best of Web
12,631.66
+0.77%
+96.99
Open
12,532.93
Day Range
12,532.71 - 12,646.80
Previous Close
12,534.67
52-Week Range
10,404.49 - 13,338.66
6/27/2012 3:38 PM
DOW 12,632.99
12,660.00
12,640.00
12,620.00
12,600.00
12,580.00
12,560.00
12,540.00
12,520.00
Jun 27
10:30 AM
11:30 AM
12:30 PM
1:30 PM
2:30 PM
3:30 PM
Day
Week
Month
1 Year
Wednesday, June 27, 2012 3:37 PM
Time zone is EDT (UTC-04:00)
REUTERS 9 HOURS AGO
Pin Watchlist

Europe's leaders at odds before summit

European leaders sound unusually divided before a high-stakes summit, with Germany's Angela Merkel saying total debt liability would not be shared in her lifetime and giving little support to Italian...

Snapping apps on the screen

While at first it might seem that you can view and work with only one Windows 8 app at a time, you can actually snap two apps to the screen at once and easily switch between them. You can even view the desktop and any running apps there side-by-side with a Windows 8 app.

To snap two Windows 8 apps to the screen, follow these steps:

1. Open the two Windows 8 apps.
2. Switch to the app you want to be "primary," and consume most of the screen space.
3. Open the app thumbnails and drag the app to the left or right side of the screen. Either action snaps the second app to the left or right of the screen.

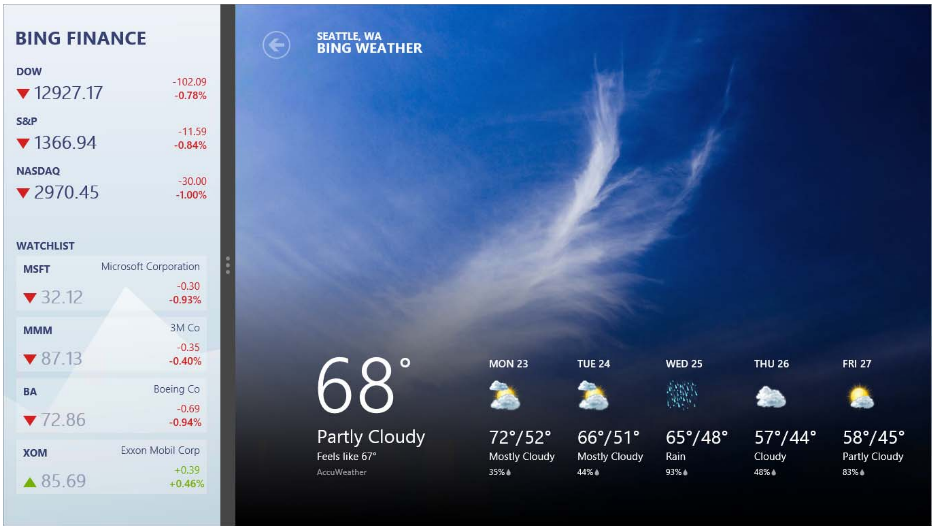
TIP

Your device must be configured for a minimum resolution of 1366 × 800 pixels to snap apps on the screen. If your resolution is lower than this, dragging another app in causes it to become the foreground app.

Figure 2.10 shows two Windows 8 apps snapped side-by-side.

FIGURE 2.10

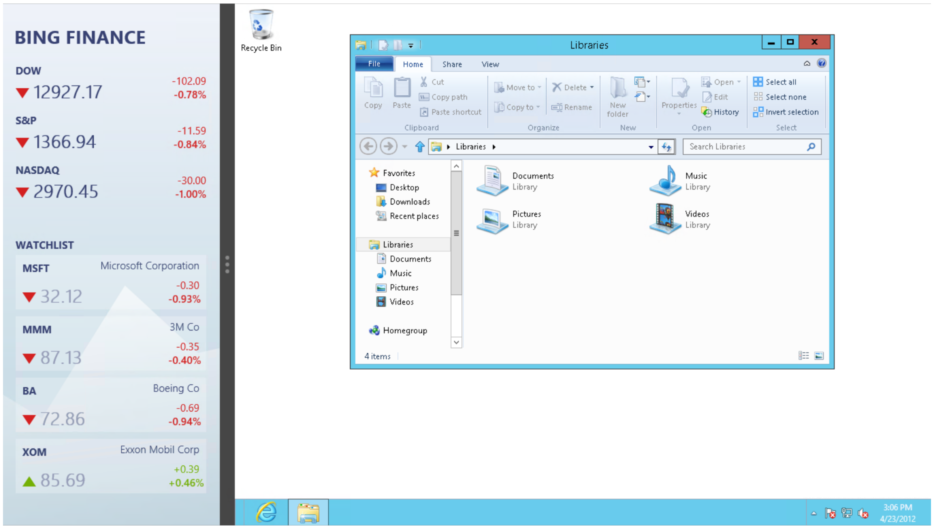
Two Windows 8 apps snapped side-by-side


BING FINANCE
DOW
▼ 12927.17
-102.09
-0.78%
S&P
▼ 1366.94
-11.59
-0.84%
NASDAQ
▼ 2970.45
-30.00
-1.00%
WATCHLIST
MSFT
Microsoft Corporation
▼ 32.12
-0.30
-0.93%
MMM
3M Co
▼ 87.13
-0.35
-0.40%
BA
Boeing Co
▼ 72.86
-0.69
-0.94%
XOM
Exxon Mobil Corp
▲ 85.69
+0.39
+0.46%
SEATTLE, WA
BING WEATHER
68°
Partly Cloudy
Feels like 67°
AccuWeather
MON 23
72°/52°
Mostly Cloudy
35%
TUE 24
66°/51°
Mostly Cloudy
44%
WED 25
65°/48°
Rain
93%
THU 26
57°/44°
Cloudy
48%
FRI 27
58°/45°
Partly Cloudy
83%

As we hinted above, you can snap a Windows 8 app beside the desktop, enabling you to see and work with a traditional Windows app on the desktop while also using a Windows 8 app. For example, Figure 2.11 shows the Windows 8 Finance app snapped beside the desktop.

FIGURE 2.11

The desktop and a Windows 8 app snapped side-by-side.


BING FINANCE
DOW
12927.17
-102.09
-0.78%
S&P
1366.94
-11.59
-0.84%
NASDAQ
2970.45
-30.00
-1.00%
WATCHLIST
MSFT
Microsoft Corporation
32.12
-0.30
-0.93%
MMM
3M Co
87.13
-0.35
-0.40%
BA
Boeing Co
72.86
-0.69
-0.94%
XOM
Exxon Mobil Corp
85.69
+0.39
+0.46%
Recycle Bin
Libraries
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New
Properties
Open
Edit
History
Select all
Select none
Invert selection
Select
Libraries
Search Libraries
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Documents Library
Music Library
Pictures Library
Videos Library
4 items
3:06 PM
4/23/2012

To snap the desktop and a Windows 8 app, open the Windows 8 app and the desktop from the Start screen. If you want to work with a desktop app, open it from the desktop. With either app in the foreground, open the app thumbnails and drag the other app to the left or right side of the screen. If you look closely at Figure 2.11, you'll see a drag handle between the two apps. Drag this handle to resize the apps, shrinking the primary app and expanding the secondary app. Drag the handle in the other direction to change the primary and secondary again.

If the desktop is primary, dragging the handle to resize the Windows 8 app causes the desktop to appear at the edge of the screen as a set of thumbnails showing the running desktop apps. You can switch to a desktop app simply by tapping or clicking on its thumbnail. It then becomes primary and the Windows 8 app shrinks to become secondary. To show only one app on the screen, drag the handle to move the unwanted app off of the screen.

NOTE

Removing an app from the screen in this way doesn't close the app; it simply brings the other app to the foreground. The other app continues to run until you close it.

Switching between apps

Experienced Windows users will be happy to learn that the methods you have used in the past to switch between apps are still available in Windows 8. For example, you can press Alt+Tab to view a list of running apps (see Figure 2.12) and select one to bring to the foreground. You can also press Windows+Tab to open a task switcher at the left of the screen showing thumbnails of your running apps (see Figure 2.13). Continue pressing Windows+Tab until the desired app is highlighted; then release the keys to switch to that app.

FIGURE 2.12

Use Alt+Tab to switch between apps.

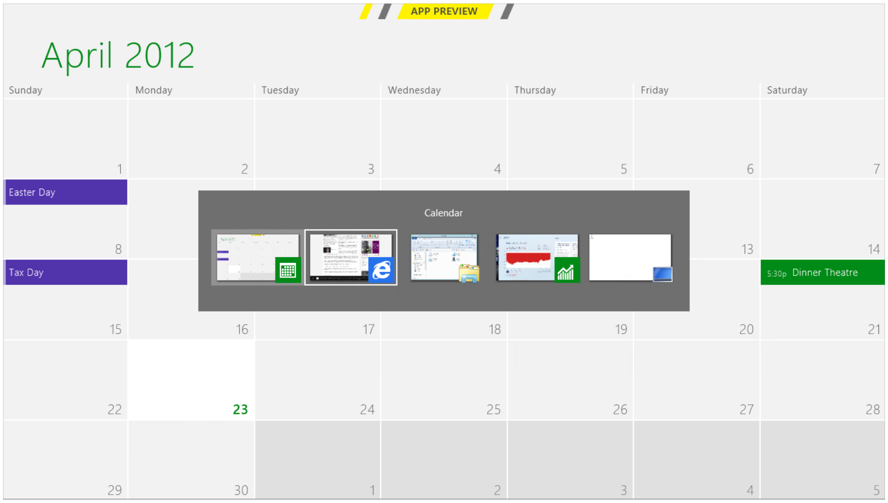
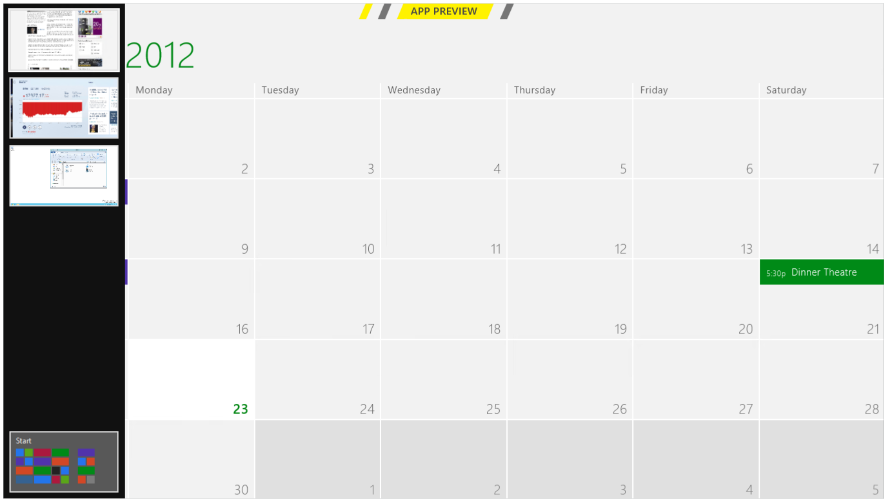

APP PREVIEW
April 2012
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Easter Day
Tax Day
Calendar
5:30p Dinner Theatre

FIGURE 2.13

Use Windows+Tab to switch between apps.


APP PREVIEW
2012
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
5:30p Dinner Theatre
Start

Thanks to the touch-based nature of Windows 8, you also have some new ways to switch applications on touch devices. These include:

- Swipe in from the left edge of the screen and release to cycle between running apps. The desktop and all apps running on the desktop are treated as a single app for the purpose of switching in this way.
- Swipe in from the left edge, hold, and then move your finger back to the left until the app thumbnails appear. Then, tap the app you want to use.
- Move the mouse cursor to the top left of the screen, and then move the mouse down to display the app thumbnails. Or, simply click in the upper-left corner of the screen to switch to the next app.
- Move the mouse cursor to the bottom left of the screen, and when the Start screen icon appears, move the mouse up to display the app thumbnails.

Closing a Windows 8 app

Closing a Windows 8 app was one task that frustrated me for quite a while. I resorted to opening the app switcher at the left of the screen, right-clicking the thumbnail, and clicking Close. On a touch device, however, I generally relied on Task Manager to close the apps. That is, until a coworker who had been using Windows 8 a bit longer than I had said, “Oh, just drag the app down to the bottom of the screen.”

Duh.

While this method isn’t all that intuitive, it is the easiest way to close a Windows 8 app, once you know the method exists. When using a mouse, just move the cursor to the top of the app until the pointer changes to a hand; then click and drag the app to the bottom of the screen. When using a touch device, swipe down from the top to the bottom of the screen. The app should close.

Getting to the Desktop

If you are like most people, you haven’t left behind your desktop-based Windows apps in favor of all Windows 8 apps. That will, no doubt, change over time as more Windows 8 apps become available and as desktop versions are updated to support the Windows 8 UI. Fortunately, Windows 8 still supports those desktop apps and makes it easy to get to them from the Start screen. To open the desktop, just tap or click the Desktop tile on the Start screen.

If you are working in a Windows 8 app and want to switch to the desktop, you can access it from the app thumbnails. Just open the thumbnails and tap or click the desktop thumbnail. Or, you can also use Alt+Tab or Windows+Tab to open the desktop.

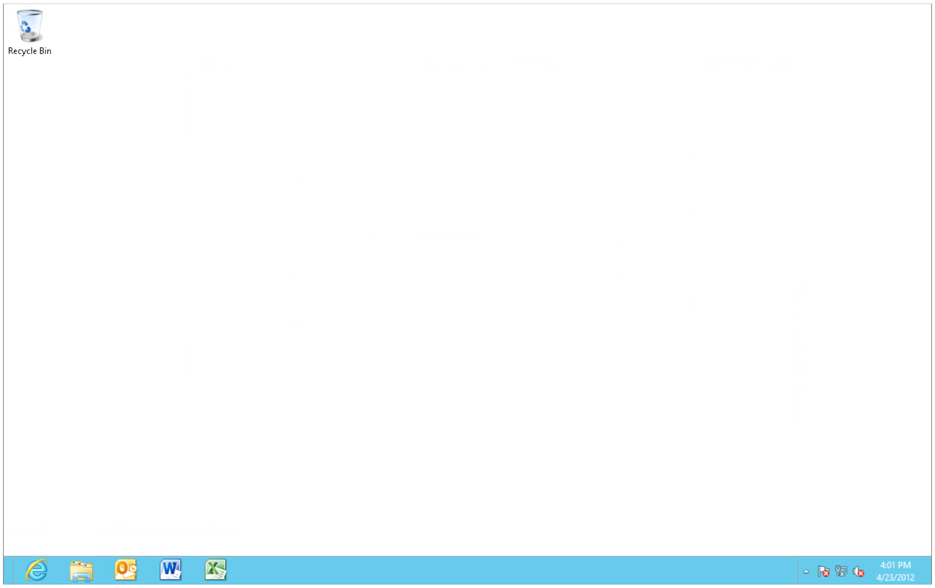
Using the Taskbar

Although not technically a part of the Start screen or the new Windows 8 interface, the Windows taskbar nevertheless deserves mention here, if for no other reason than you probably want to pin apps to the taskbar so you can get to them quickly from the desktop.

Figure 2.14 shows the taskbar at the bottom of the desktop with a small selection of apps pinned to it. As in previous versions of Windows, you can open or switch to an app by tapping or clicking its icon on the taskbar.

FIGURE 2.14

The taskbar remains an important fixture in the Windows 8 interface.



Although you can't pin Windows 8 apps to the taskbar, you can pin your other Windows apps there, as well as app resources such as File Explorer. To pin an app to the taskbar, open the Start screen or search for the app in the Search screen, right-click or tap and hold the app's tile, and in the app menu, tap or click Pin To Taskbar.

Wrap-Up

Although there are some significant improvements and new features in Windows 8 geared toward the enterprise and traditional desktop user, some of Windows 8's biggest impact will be in the tablet and handheld market. Windows 8 and its new UI are clearly designed to tackle that market. The clean Windows 8 look is well suited to tablets and smaller devices, uncluttering the display.

While some of the gestures and actions you use to work in the Windows 8 interface aren't exactly intuitive, most of them are, and you should have little trouble getting the hang of the new interface. To learn more about Windows 8 on handheld devices, read through Chapter 3. If you are new to Windows, turn to Chapter 4 to learn how to navigate through the desktop and work with desktop apps.

CHAPTER 3

Windows 8 on Mobile Devices

IN THIS CHAPTER

- **Windows 8 for mobile**
- **Windows Phone 8**
- **Windows 8 tablets**

Microsoft designed Windows 8 to work on various types of computing devices, including desktop computers, laptops, tablets, and phones.

In this chapter, you can read about the requirements for running Windows 8 on mobile devices, namely Windows phones and tablets.

Windows 8 Mobile

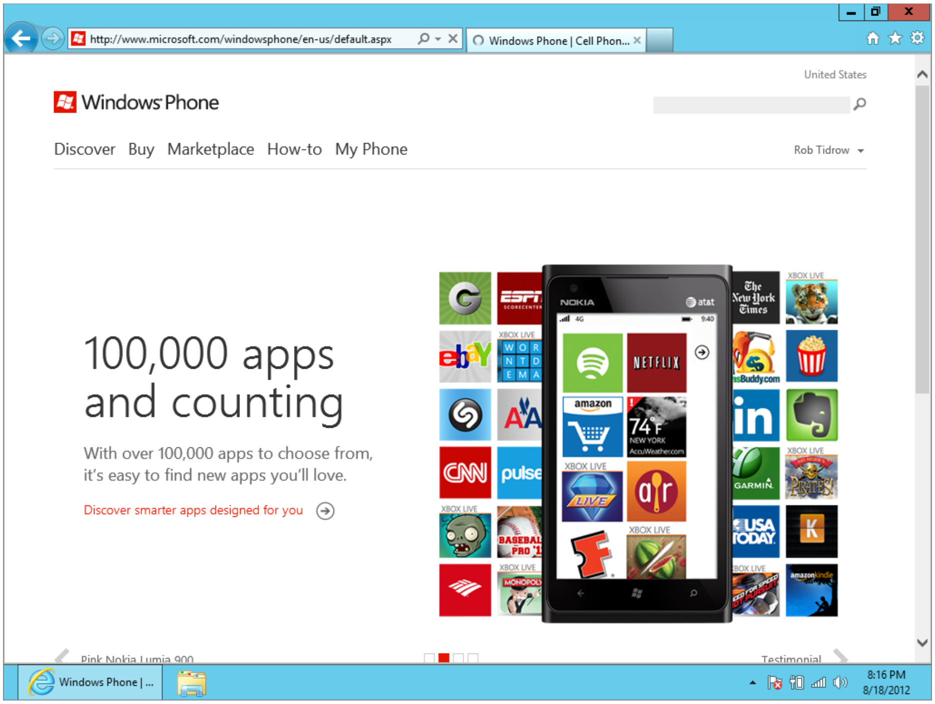
Mobile devices have become very popular over the last few years for two main reasons — the Apple iOS and Google Android operating systems. These operating systems have made tablet devices and smart phone devices affordable, reliable, and easy to use. The design of the Windows 8 operating system will help Microsoft position itself alongside Apple and Google for robust tablet and phone devices.

Windows Phone 8

Microsoft announced Windows Phone 8 during the Windows 8 beta phase, which would enable people to use the Windows 8 operating system on compatible smart phones. Pre-release information from Microsoft shows that one of the early changes for Windows Phone 8 will include live tiles on the phone Start screen. Figure 3.1 shows an example of live tiles on a Windows phone on the Microsoft website. Notice how the tiles indicate phone calls, messages, pictures, and other dynamic information for the user.

FIGURE 3.1

Live tiles on Windows Phone 8


http://www.microsoft.com/windowsphone/en-us/default.aspx
Windows Phone | Cell Phon...
United States
Windows Phone
Discover
Buy
Marketplace
How-to
My Phone
Rob Tidrow
Discover smarter apps designed for you
Pink Nokia Lumia 900
Testimonial
Windows Phone | ...
8:16 PM
8/18/2012

100,000 apps and counting

With over 100,000 apps to choose from, it's easy to find new apps you'll love.

At the time of this writing, the Windows Phone 8 tiles can be customized by the user. For example, you can choose between large, medium, and small tiles. The small ones are a quarter the size of the medium ones, so you can fit four small ones in the same space as a medium-sized tile. Tiles also can be rearranged on the screen by dragging them to a different location. You can unpin a tile to remove it from the Start screen.

The following are some of the key features found on Windows Phone 8 and compatible devices:

- Internet Explorer (IE) 10, which includes a service called SmartScreen for reducing access by malicious sites trying to gather personal data about you
- Disk encryption to encrypt files on the device
- Secure boot, which requires Windows Phone 8 to be loaded on the device — and only Windows Phone 8
- SD card storage to expand native file storage and for application storage

- Microsoft Wallet app for quickly paying online with services such as PayPal
- Video capabilities for users to establish “video phone” sessions using Microsoft Skype
- VoIP (Voice over Internet Protocol) for phone calls that use a business’ network infrastructure to handle incoming and outgoing calls

Windows 8 tablets

At the time of this writing, Windows 8 tablets are being announced in the press and on various websites. For example, Microsoft announced during the beta phase of Windows 8 a new Microsoft Surface tablet aimed at competing with Apple iPad and Android devices (including the Samsung Galaxy tablet). Other companies with plans to release Windows 8 tablets include Lenovo, Dell, HP, and Samsung.

Windows 8 on mobile devices provides the following capabilities:

- Multi-touch screen navigation
- Use of hand and finger gestures
- Windows 8 app interface
- Onscreen keyboard input
- Resolution of at least 1366×768
- USB 2.0 port and at least one controller
- Audio speakers
- Storage of at least 10GB free space
- Wi-Fi network device
- Bluetooth 4.0 + LE (low energy)
- Direct3D 10 graphics with the WDDM 1.2 driver
- 720 pixel camera
- Gyroscope
- Magnetometer
- Accelerometer that supports three axes and a data rate of less than or equal to 50 Hz

Wrap-Up

Windows 8 is designed to perform well on different types of computing devices, including personal computers (PCs), laptops, tablets, and smart phones.

CHAPTER

4

Getting Around the Windows Desktop

IN THIS CHAPTER

Logging in

Using the Windows desktop

Using the Start screen

Using programs

Shutting down the computer

In today's busy world, few people have the time to sit down and really learn to use a computer. Many books and online tutorials don't really help because they assume you already know all the basic concepts and terminology. That's a big assumption because the truth is that most people don't already know those things. Most people don't know a file from a folder from a megabyte from a golf ball. These just aren't the kinds of things we learned about in school or from our day-to-day experiences.

This chapter is mostly about the kinds of things everyone else assumes you already know. It's for the people who just bought their first computer and discovered it has this thing called Windows 8 on it. Or the people who were getting by with an older computer but now have a new Windows 8 computer and really want to know more about how to use it.

We often refer to the skills in this chapter as "everyday skills" because they're the kinds of things you'll likely do every time you sit down at the computer. In this chapter, we point out the name and purpose of many elements you'll see on your screen. Together, these bits of information provide a foundation of basic knowledge of how you use a computer, in general, to get things done. And it all starts with logging in.

Terminology for Things You Do

If you're new to computers, the first step is to learn a little terminology about actions you perform to operate the computer. We assume you know what the *mouse* is. When you move the mouse, the *mouse pointer* on the screen moves in whatever direction you move the mouse.

Most mice have two buttons. The button on the left is the *primary* or *left* mouse button. It's referred to as the primary button because clicking it always makes an action occur directly.

When you rest your hand comfortably on the mouse, the left mouse button should be under your index finger. You don't want to hold the button down, however. Just rest your index finger on it lightly. If you are left-handed, you can switch the orientation of the buttons using the Mouse applet in the Control Panel.

The button on the right is the *secondary* or *right* mouse button. In contrast to the primary mouse button, clicking the secondary mouse button usually doesn't make an action take place directly; instead, it shows you various actions you can take.

Windows 8 includes new terminology for new mouse and touch-based gestures. Those terms are covered in detail in Chapter 2 where you learn more about the new Windows 8 interface. Also, read Chapter 3 for details on how to navigate Windows 8 tablet and mobile devices.

Mouse terminology

Everyone uses some specific terms to refer to actions you perform with the mouse. These terms include *point*, *click*, *double-click*, *right-click*, and *drag*.

Point

The term *point*, when used as a verb, means to touch the mouse pointer to an item. For example, "point to the Desktop tile" means to move the mouse pointer so that it's positioned over top of the Desktop tile (the tile named Desktop that, by default, is at the lower-left corner of the Start screen). If the item you want to point to is smaller than the mouse pointer, make sure you get the tip of the mouse pointer arrow on the item. Whatever the tip of the mouse pointer is on is the item to which you're pointing.

The term *hover* means the same thing as "point." For example, the phrase "hover the mouse pointer over the Desktop tile" means the same as "point to the Desktop tile."

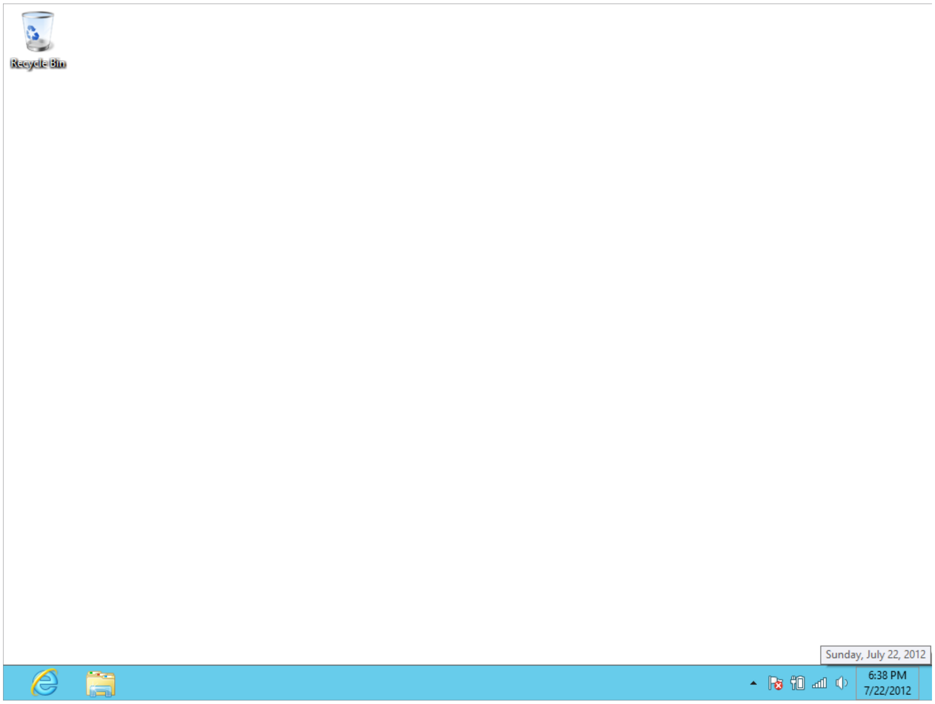
When you point to an item on the Windows desktop, the item's name typically appears in a *tooltip*. For example, if you point to a date and time on the notification bar on the Windows desktop taskbar, the day and date appear in a tooltip near the mouse pointer. The tooltip tells you the name of the item you're pointing to. Figure 4.1 shows an example of a tooltip when pointing to the desktop calendar.

TIP

You can learn the name and purpose of many items on your screen just by pointing to the item and reading the tooltip that appears near the mouse pointer.

FIGURE 4.1

The tooltip that shows when pointing to the Windows desktop calendar on the notification bar



Click

The term *click* means to point to an item and then tap the left mouse button. Don't hold down the left mouse button. Just tap (press and release) it. It makes a slight clicking sound when you do. For example, the phrase "click the Desktop tile" means "put the mouse pointer on the Desktop tile on the Start menu and tap the left mouse button." When you do, the Windows desktop appears.

Double-click

The term *double-click* means to point to an item and then tap the left mouse button twice, quickly. Don't hold down the button and don't pause between clicks. Just tap the left mouse button twice. You use double-clicking to *open* items that icons on your screen represent.

Right-click

The term *right-click* means to point to an item and then tap the right mouse button. Again, don't hold down the mouse button, and don't use the left mouse button. Whereas clicking an item usually takes an immediate action, right-clicking presents a shortcut menu of things you can do with the item. You'll see many examples throughout this book.

Drag

The term *drag* means to point to an item and hold down the left mouse button while you're moving the mouse. You typically use dragging to move and size things on the screen. You can see examples a little later in this chapter.

As you discover in Chapter 28, you can also use dragging to move and copy files from one location to another.

Keyboard terminology

It should go without saying that the computer keyboard is the thing that looks like a typewriter keyboard. The keys labeled F1, F2, and so forth across the top are *function keys*. The keys with arrows and names such as Home, End, PgUp (Page Up), and PgDn (Page Down) are *navigation keys*.

Tab, Enter, and Spacebar

The Tab key has two opposing arrows pointing left and right. That key is usually to the left of the letter *Q*. The Enter key (also called the Carriage Return or Return key) is located where the carriage return key is on a standard typewriter. It may be labeled Enter or Return, or it may just show a bent, left-pointing arrow. The Spacebar is the wide key centered at the bottom of the keyboard. When you're typing text, it types a blank space.

If in doubt, Escape key out

The Escape key is labeled Esc or Escape (or maybe even Cancel). It's usually at the upper-left corner of the keyboard. It's a good one to know because it often allows you to escape from unfamiliar territory.

The Help key (F1)

The Help key is the F1 function key. That's a good one to know because it's the key you press for help. Not the kind of help where someone appears and helps you along. Unfortunately, it's not possible to get that kind of help from a computer. Instead, pressing Help opens a help window. You learn more about getting help in Chapter 7.

The ⊞ key

If you have a Windows keyboard, you also have a *Windows key*, which shows the Windows logo. In text, that's often referred to as ⊞. It's usually near the lower-left corner of the keyboard. The Windows key might also show the word Start because you can tap it to show and hide the Windows 8 Start screen.

Shift, Ctrl, and Alt

The keys labeled Shift, Ctrl (Control), and Alt (Alternate) are *modifier* keys. There are usually two of each of those keys on a keyboard, near the lower left and lower right of the main typing keys. The Shift key may be labeled with a large, up-pointing arrow. One Shift key is located to the left of the Z key, the other to the right of the question mark (?) key. They're called modifier keys because they usually don't do anything by themselves. Instead, you hold down a modifier key while pressing some other key. For example, when you hold down the Shift key and press the *A* key, you get an uppercase *A* rather than a lowercase *a*.

Shortcut keys

The term *press* always refers to a key on the keyboard rather than something you do with the mouse. For example, the statement "Press Enter" means to press the Enter key. When you see an instruction to press two keys with a + in between (*key*+*key*), that means "hold down the first key, tap the second key, release the first key." For example, the instruction "Press Ctrl+Esc" means "Hold down the Ctrl key, tap the Esc key, release the Ctrl key."

For Windows 8, you may see the following several times in this book: Press Windows+X while on the Windows desktop. This displays a new Windows 8 menu called the power menu. It displays in the same location that the Start menu in previous versions of Windows (including Windows 7, Vista, XP, 98, and 95) displayed. The power menu includes several key menu options to help you locate system apps and programs, such as the Control Panel, Event Viewer, and so on.

You'll often see the term *shortcut key* used to refer to *key*+*key* combinations. The "shortcut" part refers to the fact that the keystroke is an alternative way of doing something with the mouse. (It may not seem like much of a shortcut, however, if you can't type worth beans!)

Much as we all hate to learn terminology, knowing the terms and keyboard keys we just described is critical to learning how to use a computer. All written and spoken instructions assume that you know what those terms mean. If you don't, the instructions won't do you any good.

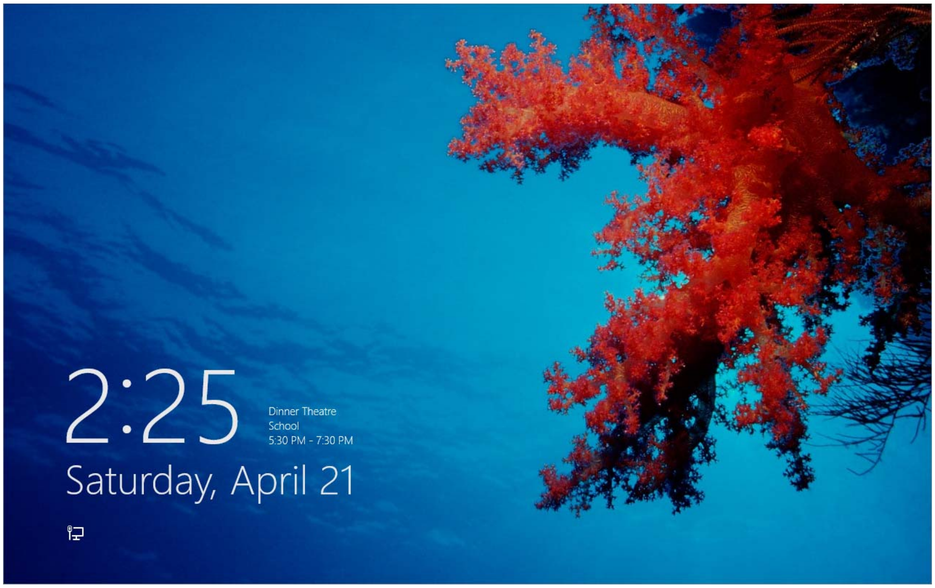
Okay, let's move on to using the computer and to the names of things you'll do, see, and use often.

Logging In

Obviously, the first step to using a computer is to turn it on. Shortly after you first start your computer, the Windows 8 Lock screen appears (see Figure 4.2). To log in, *slide* the display up. To slide on a touch device, move your finger from the bottom of the display toward the top. With a mouse, click and drag the display toward the top. Windows displays the list of user accounts available on the device. You learn more about user accounts in Chapter 5, but for now, all you need to know is that if you see user account icons shortly after you first start your computer, you have to click one in order to use the computer. Tap (touch or click) on a user tile to enter the password for that user account, and then press Enter or tap (or click) the arrow icon to the right of the password field.

FIGURE 4.2

The Windows Lock screen



You also can use a new Windows 8 feature called Picture Passwords to log in to Windows. The Picture Passwords feature is covered in Chapter 5.

TIP

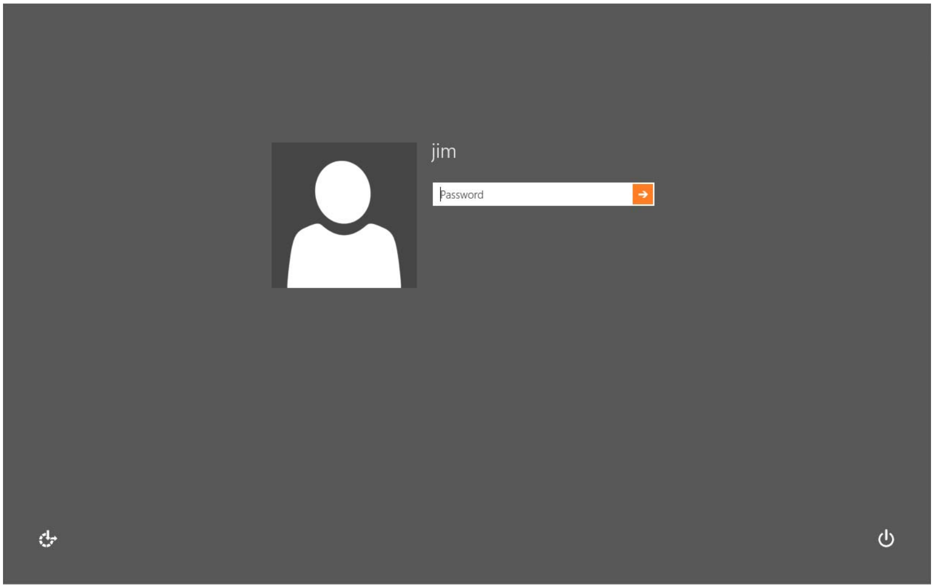
The blue circle near the lower-left corner of the screen provides Ease Of Access options for the visually impaired. The button at the lower-right corner lets you turn off the computer rather than log in.

If the user account isn't password-protected, the Windows Start screen appears automatically. If the user account you clicked is password-protected, a rectangular box appears instead. You have to type the correct password for the account to get to the Windows Start screen. The letters you type won't show in the box by default. Instead, you'll see a dot for each letter you type, as in Figure 4.3. This prevents others from learning your password by looking over your shoulder as you type it on the screen. To temporarily see the characters you enter, press and hold the eye icon on the right side of the password box. This toggles on the characters so you can see that what you typed is what you intended to type.

After you type the password, press Enter or click the arrow to the right of the password box.

FIGURE 4.3

Typing a password



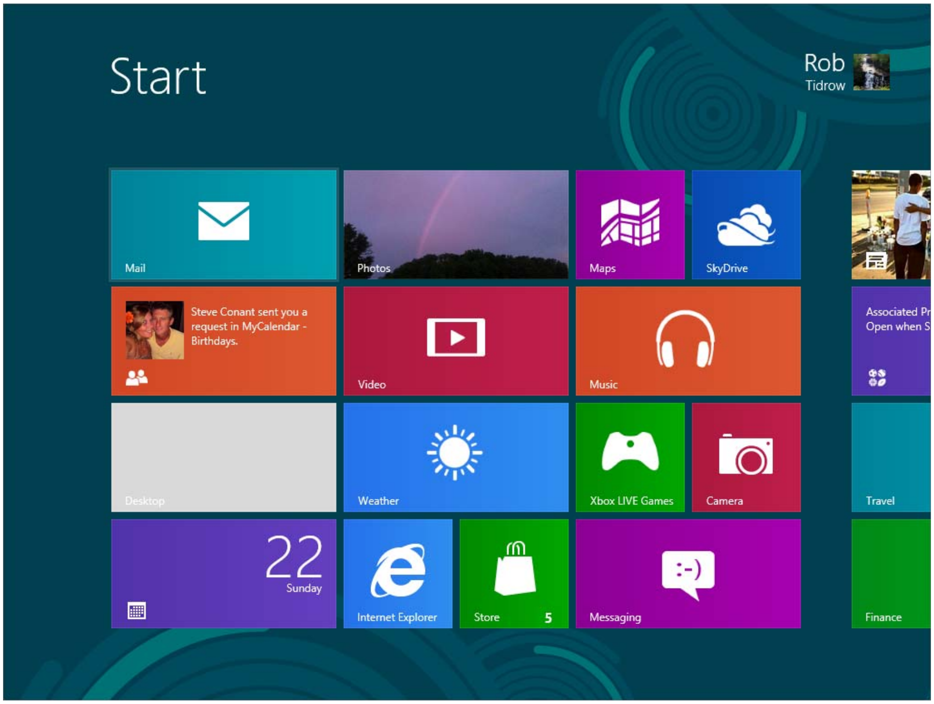
After you've successfully logged in, the Windows Start screen appears.

Windows Start Screen

After you log on, you'll see the Windows 8 Start screen, shown in Figure 4.4. The Start screen serves much the same function as the Start menu in previous versions of Windows. Square or rectangular tiles give you quick access to apps, external resources such as SkyDrive, folders, and even the desktop. The Start screen shows the look of the new Windows 8 interface. We don't focus on the Start screen in this chapter as it was discussed in detail in Chapters 2 and 3.

FIGURE 4.4

Windows Start screen


Start
Rob
Tidrow
Mail
Photos
Maps
SkyDrive
Video
Music
Associated Pr
Open when S
Desktop
Weather
Xbox LIVE Games
Camera
Travel
22
Sunday
Internet Explorer
Store
5
Messaging
:-)
Finance

Steve Conant sent you a request in MyCalendar - Birthdays.

Using the Windows Desktop

As mentioned, the Windows desktop is the electronic equivalent of a real desktop. It's the place where you keep stuff you're working on right now. Every program that's currently open is usually contained within some program window. When no programs are open, the desktop and all your desktop icons are plainly visible on the screen.

What's on the desktop

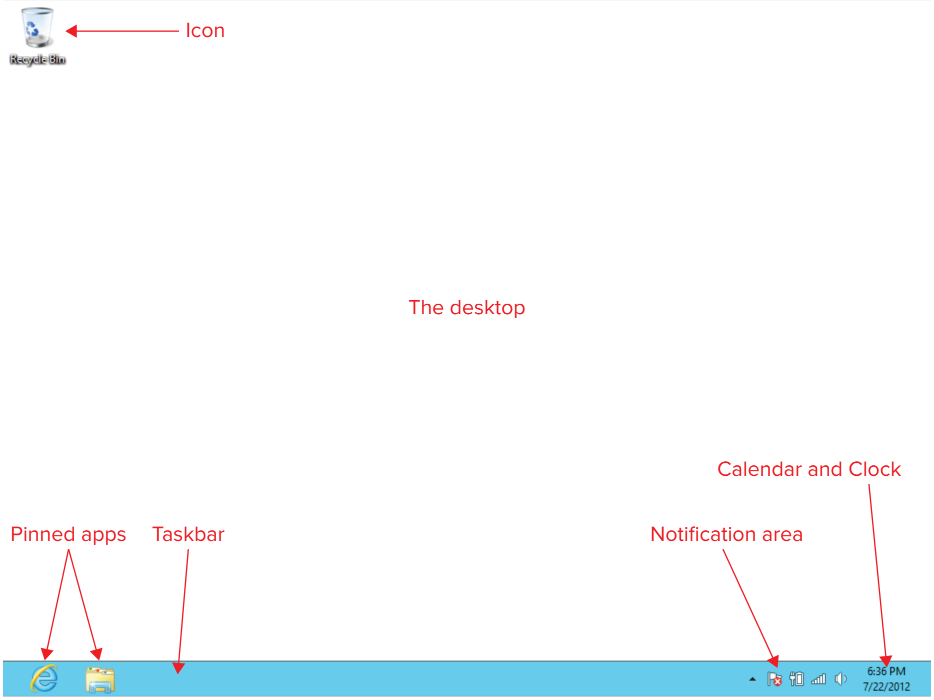
Users upgrading from previous Windows versions are familiar with the *Windows desktop*, the primary place for users to start their work in earlier versions of Windows. The term "desktop" was used to describe computer environment that played the same role as a real work desktop. You worked with programs on the Windows desktop in much the same way as you work with paper on an office desktop. With Windows 8, the Start screen replaces the desktop as the primary work environment. However, the Windows desktop can still be used to launch pinned applications and applications that install icons to the desktop.

The desktop is accessed from the Start screen by clicking the Desktop tile. The desktop may get covered by program windows and other items, but the desktop is still under there no matter how much you clutter the screen. It's the same as a real desk in that sense. Although your real desktop may be completely covered by random junk (as mine is right now), your desktop is still under there somewhere. You just have to dig through the mess to get to it.

The two main components of the Windows desktop are the desktop itself and the taskbar. The desktop is where everything that you open piles up. The taskbar's main role is to make it easy to switch from one open item to another. Everything you'll ever see on your screen has a name and a purpose. Virtually nothing on the screen is there purely for decoration (except the wallpaper). Figure 4.5 shows the main components of the Windows desktop and other items. Your desktop might not look exactly like the picture and might not show all of the components. But don't worry about that. Right now, you want to focus on learning the names of the most frequently used elements.

FIGURE 4.5

The desktop, taskbar, and other items



Here's a quick overview of what each component represents.

TIP

You learn to personalize your desktop in Chapter 13. But here's a quick hint: Virtually everything you'll ever see on your screen, including the desktop, is an *object* that has *properties*. To customize any object, right-click that object and choose Properties.

- **Desktop:** The desktop itself is everything above the taskbar. Most programs you open appear in a window on the desktop.
- **Desktop icons:** Icons on the desktop provide quick access to frequently used programs, folders, and documents. You can add and remove desktop icons as you see fit.
- **Power menu:** The power menu displays at the bottom left of the desktop in the same place that the Start menu previously displayed. The power menu provides access to commonly used Windows programs and apps. To see it, right-click the bottom left side of the screen, or press Windows+X.
- **Taskbar:** A task is an open program. The taskbar makes switching among all your open programs easy. Right-clicking the clock in the taskbar provides easy access to options for customizing the taskbar and organizing open program windows.
- **Notification area:** Displays icons for programs running in the background, often referred to as *processes* and *services*. Messages coming from those programs appear in speech balloons just above the Notification area.
- **Clock:** Shows the current time and date.

That's the quick tour of items on and around the Windows 8 desktop. The sections that follow examine some of these items in detail.

About desktop icons

Desktop icons represent a *closed* object that you can *open* by double-clicking the icon. Most desktop icons are shortcuts to files and folders. They're shortcuts in the sense that they duplicate icons that are available elsewhere, such as on the Start screen.

Rules always have exceptions. When it comes to desktop icons, the Recycle Bin is the exception. The Recycle Bin icon exists only on the desktop, and you won't find it anywhere else. The role of the Recycle Bin is that of a safety net. Whenever you delete a file or folder from your hard drive, the item is actually just moved to the Recycle Bin. You can restore an accidentally deleted item from the Recycle Bin back to its original location.

In addition to the Recycle Bin, you have other built-in desktop icons from which to choose. If you want to take a shot at adding icons, you have to get to the Personalization page and make some selections. To get to the Personalization page, use one of the following methods:

- Shows the Charms Bar, click Search, and type **pers**. Click Settings and then click Personalization on the Settings screen.
- Right-click the desktop and choose Personalize.

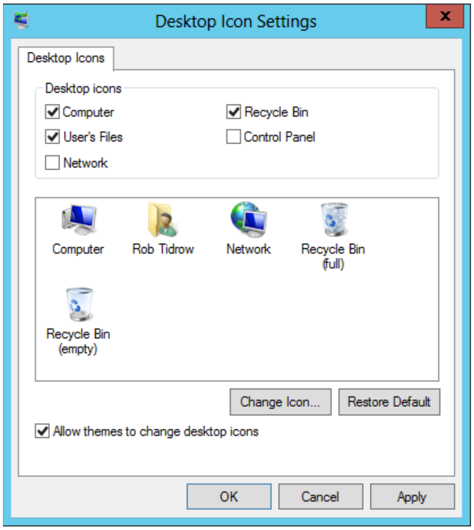
NOTE

If you don't see Personalize when you right-click the desktop, that means you didn't right-click the desktop. You right-clicked something that's covering the desktop. You learn to close and hide things that are covering the desktop a little later in this chapter.

The Personalization Control Panel applet opens. In its left column, click Change Desktop Icons. You see a *dialog box* like the one in Figure 4.6. It's called a "dialog" box because you carry on a sort of dialog with it. It shows you options from which you can pick and choose. You make your choices and click OK. You'll see menu dialog boxes throughout this book.

FIGURE 4.6

The Desktop Icon Settings dialog box


Desktop icons

☑ Computer

☑ Recycle Bin

☑ User's Files

☐ Control Panel

☐ Network

☑ Allow themes to change desktop icons

To make an icon visible on your desktop, select (click to put a checkmark in) the check box next to the icon's name. To prevent an icon from appearing on the desktop, click the check box to the left of its name to deselect it (remove the checkmark). In the figure, I've opted to see all icons except the Network and Control Panel icons.

You can choose a different picture for any icon you've opted to show on the desktop. Click the icon's picture in the middle of the dialog box. Then click the Change Icon button. Click the icon you want to show and then click OK. If you change your mind after the fact, click Restore Default.

Click OK after making your selections. The dialog box closes and the icons you choose appear on the desktop. However, you might not see them if that part of the desktop is covered by something that's open. Don't worry about that. You learn about how you open, close, move, and size things on the desktop a little later in this chapter.

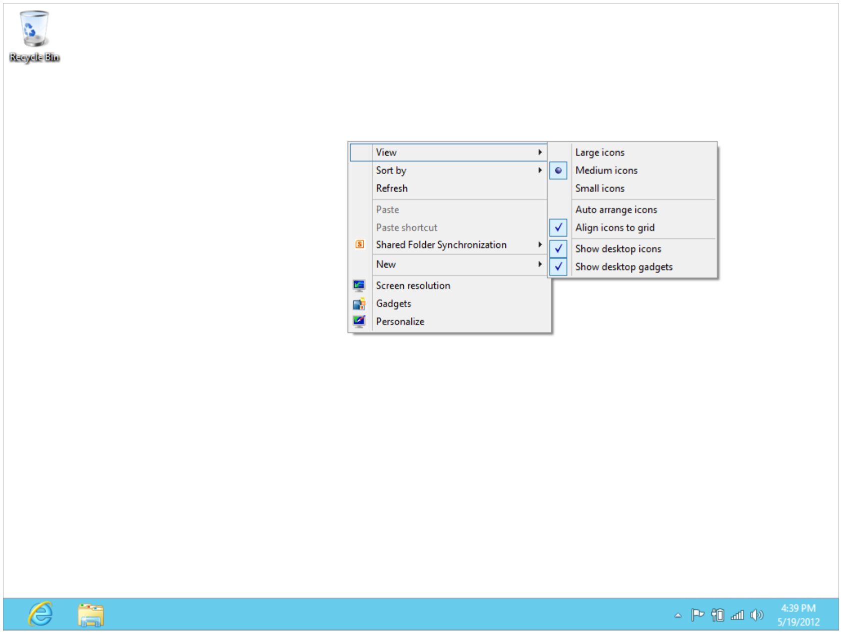
If nothing is covering the desktop, but you still don't see any desktop icons, they might just be switched off. We cover this topic in the next section.

Arranging desktop icons

As you discover in Chapter 13, there are many ways to customize the Windows 8 desktop. But if you just want to make some quick, minor changes to your desktop icons, right-click the desktop to view its shortcut menu. Items on the menu that have a little arrow to the right show submenus. For example, if you right-click the desktop and point to View on the menu, you see the View menu, as shown in Figure 4.7.

FIGURE 4.7

Right-click the desktop.


Recycle Bin
View
Sort by
Refresh
Paste
Paste shortcut
Shared Folder Synchronization
New
Screen resolution
Gadgets
Personalize
Large icons
● Medium icons
Small icons
Auto arrange icons
✓ Align icons to grid
✓ Show desktop icons
✓ Show desktop gadgets
4:39 PM
5/19/2012

The second to last item on the View menu, Show Desktop Items, needs to be selected (checked) for the icons to show at all. If no checkmark appears next to that item, click that item. The menu closes and the icons appear on the desktop. When you need to see the menu again, just right-click the desktop again.

The top three items on the menu — Large Icons, Medium Icons, and Small Icons — control the size of the icons. Click any option to see its effect. If you don't like the result, right-click the desktop again, choose View, and choose a different size.

TIP

If your mouse has a wheel, you can also size icons by holding down the Ctrl key as you spin the mouse wheel. This gives you an almost endless range of icon sizes from which to choose. Use one of the three items in the View menu to get them back to one of the three default sizes.

The Sort By option on the desktop shortcut menu enables you to arrange desktop icons alphabetically by Name, Size, Item Type, or Date Modified. However, no matter how you choose to sort icons, the built-in icons are sorted separately from those you create.

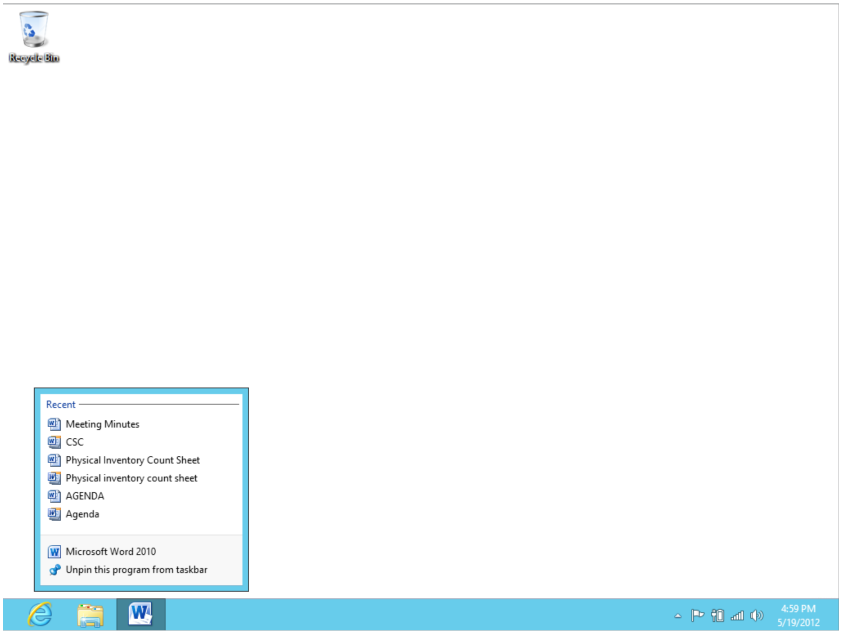
You learn more about personalizing your desktop in Chapter 13.

Using Jump Lists

Jump lists were a new feature of Windows 7 that enhance the usefulness of the icons and pin items on the taskbar. Windows 8 continues to use jump lists. Jump Lists add the most recently used objects from the application to a pop-up menu. Just right-click the icon to view the Jump list (see Figure 4.8).

FIGURE 4.8

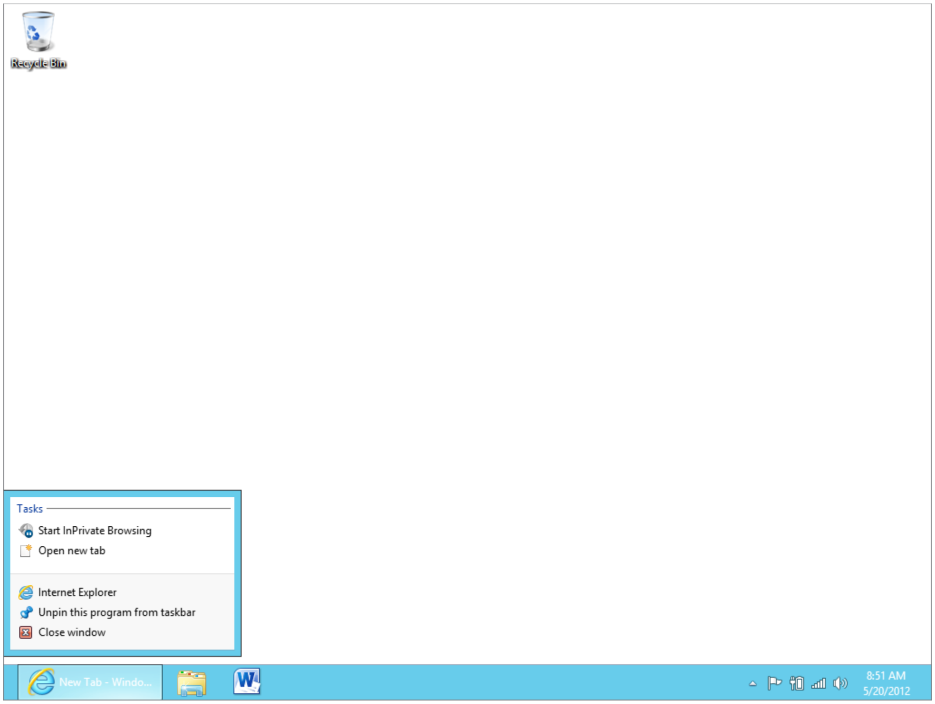
A Jump list for Microsoft Word


Recycle Bin
Recent
Meeting Minutes
CSC
Physical Inventory Count Sheet
Physical inventory count sheet
AGENDA
Agenda
Microsoft Word 2010
Unpin this program from taskbar
4:59 PM
5/19/2012

Other applications written for Windows 8 offer additional capabilities in the Jump menu. For example, Internet Explorer 10 offers a command to let you open a new tab (see Figure 4.9).

FIGURE 4.9

Open a new browsing tab in the IE Jump menu


Recycle Bin
Tasks
Start InPrivate Browsing
Open new tab
Internet Explorer
Unpin this program from taskbar
Close window
New Tab - Windo...
8:51 AM
5/20/2012

You don't need to do anything to set up Jump lists — they happen automatically. Whenever you want to use a Jump list, just right-click a taskbar icon and choose from the list the item you want to open.

Running Programs and Apps

You can start any program or app that's installed on your computer by finding the program's icon on the Start screen or by searching for it using the Search app, and then clicking that icon. There are other ways to start programs as well. For example, if you see an icon for the program pinned to the taskbar, you can click that. If you see a shortcut icon to the program on the desktop or pinned to the taskbar, you can click (or double-click) that icon to start the program.

Whether you need to single-click or double-click a desktop icon to open it depends on how you have configured Windows 8. See Chapter 27 for details.

Every time you start a program or app, an *instance* of that program opens in a program window. No rule exists that says you can have only one program open at a time. Some programs even enable you to open multiple copies of the same program. (New Windows 8 apps, however, limit you to running only one copy of that app at a time.) You can have as many programs open simultaneously as you can cram into your available memory (RAM). Most programs allow you to run multiple instances. The more memory your system has, the more stuff you can have open without much slowdown in performance.

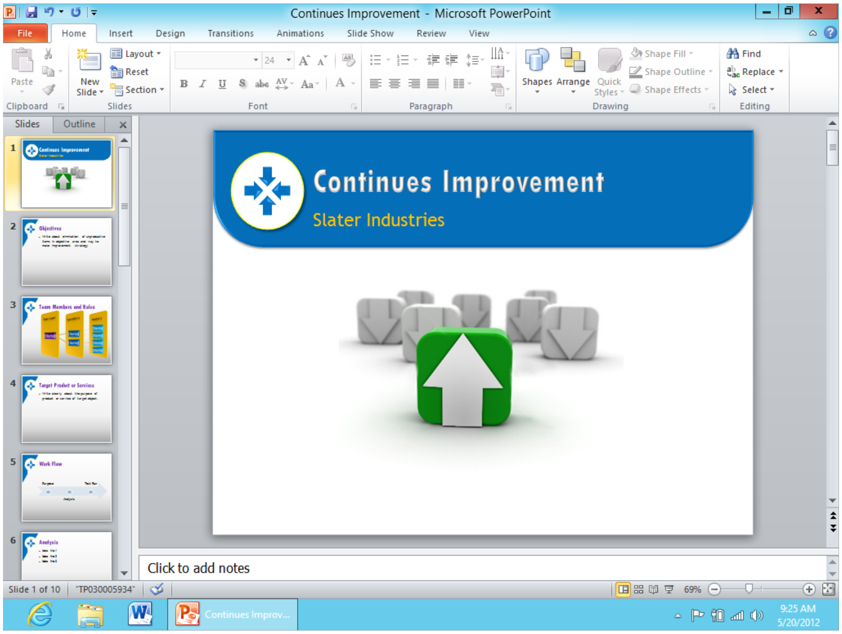
NOTE

When it comes to using programs, or apps, the terms *start*, *run*, *launch*, and *open* all mean the same thing—to load a copy of the program into memory (RAM) so that it's visible on your screen. You can't use a program or app until it's running.

Most programs you open show their own name somewhere near the top of the program window. Figure 4.10 shows Microsoft PowerPoint open on the desktop. You see its name in the title bar at the top of the window, appearing either by itself or as part of a string of items.

FIGURE 4.10

Sample title bar and taskbar button


Continues Improvement - Microsoft PowerPoint
File
Home
Insert
Design
Transitions
Animations
Slide Show
Review
View
Paste
Layout
Reset
New Slide
Section
Clipboard
Slides
Font
Paragraph
Shapes
Arrange
Quick Styles
Shape Fill
Shape Outline
Shape Effects
Drawing
Find
Replace
Select
Editing
Slides
Outline
Continues Improvement
Slater Industries
Click to add notes
Slide 1 of 10
"TP030005934"
69%
Continues Improv...
9:25 AM
5/20/2012

NOTE

Windows 8 apps do not follow the same window conventions that regular Windows programs do. For example, many apps, such as the Weather app, do not show a title bar or status bar. Also, you do not resize their windows as you can conventional Windows programs. You learn more about Windows 8 apps in several chapters of this book, including Chapters 2, 12, and 37.

Most items that you open also have a taskbar button. The name in the taskbar button matches the name of the item. For example, the taskbar button for the open PowerPoint program also shows the name of the PowerPoint presentation we're editing on the taskbar. You can click the PowerPoint taskbar button to make the open window appear and disappear. That's a good thing to know because sometimes you want to get something off the screen temporarily so that you can see something else on the screen.

When you have multiple program windows open, they stack up on the desktop the way multiple sheets of paper on your real desktop stack up. When you have multiple sheets of paper in a pile, you can't see what's on every page. You can see only what's on the top page because all the other pages are covered by that page.

It works the same way with program windows. When you have multiple program windows open, you can see only the one that's on the top of the stack. We call the program that's on the top of the stack the *active window*.

NOTE

Some programs have an option called "Always on Top" that makes them display on top of the stack even when they are not active. So, a program could be active but not necessarily on top of the stack. For the purposes of this chapter, however, assume that the active window is always the one on top of the stack.

The active window

When two or more program windows are open on the desktop, only one of them can be the active window. The active window has some unique characteristics:

- The active window is usually on the top of the stack. Any other open windows will be under the active window so that they don't cover any of its content. The exception is a window configured for Always On Top, as described previously.
- The taskbar button for the active window is highlighted with a brighter foreground color.
- Anything you do at the keyboard applies to the active window only. You cannot type in an inactive window.

Switching among open programs

Whenever you have two or more programs open at the same time, you want to be able to easily switch among them. You have several ways to switch among open programs, as discussed in the sections that follow.

NOTE

The taskbar shows a miniature version of the window by default. Pointing to a taskbar button reveals a tooltip with the name of the window or program. You can set the size of the icons used by the taskbar through the properties for the taskbar.

Switching with taskbar buttons

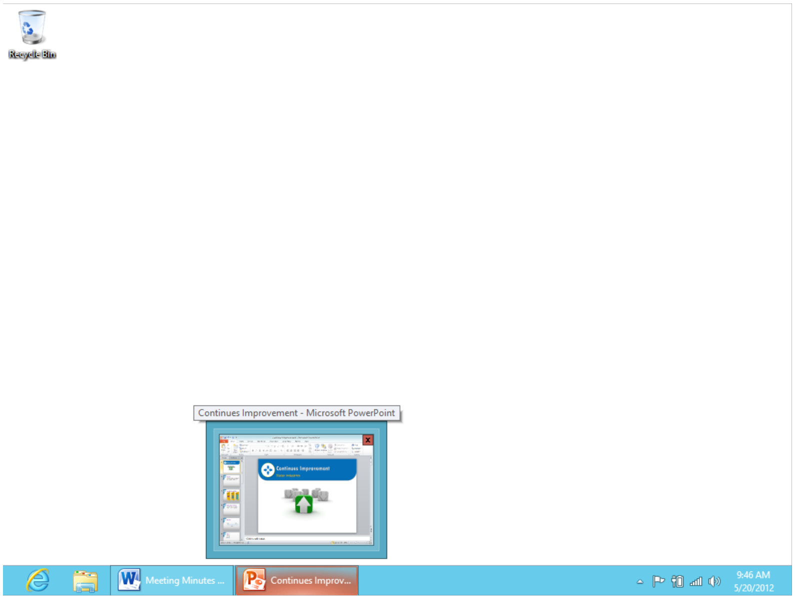
As mentioned, almost every open program has a button on the taskbar. When you have multiple open programs, you have multiple taskbar buttons. To make any one particular program active, click its taskbar button. If you're not sure which button is which, point to each button. You see the name and a miniature copy of the program that the button represents, as in Figure 4.11. You also see a full-size preview of the window.

TIP

If any portion of the window you want to bring to the top of the stack is visible on the screen, you can just click that visible portion of the window to bring it to the top of the stack.

FIGURE 4.11

Pointing to a taskbar button



Switching with the keyboard

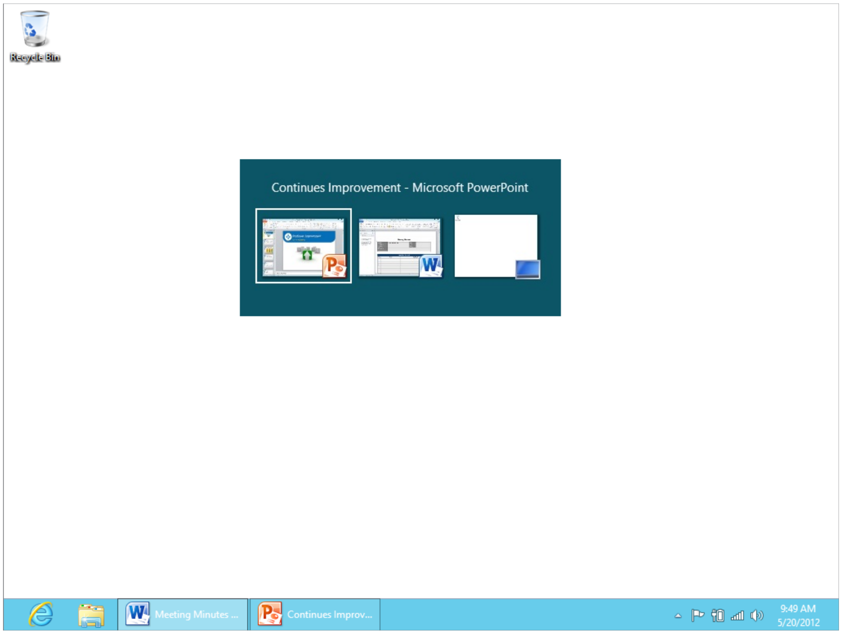
If you prefer the keyboard to the mouse, you can use Alt+Tab to switch among open windows. Hold down the Alt key and then press the Tab key. You see a thumbnail image for each open program window, as in the example shown in Figure 4.12. Keep the Alt key pressed down and keep pressing Tab until the name of the program you want to switch to appears above the icons. Then release the Alt key.

TIP

The Tab key shows two arrows pointing in opposite directions and is usually just to the left of the letter Q on the keyboard.

FIGURE 4.12

Alt+Tab window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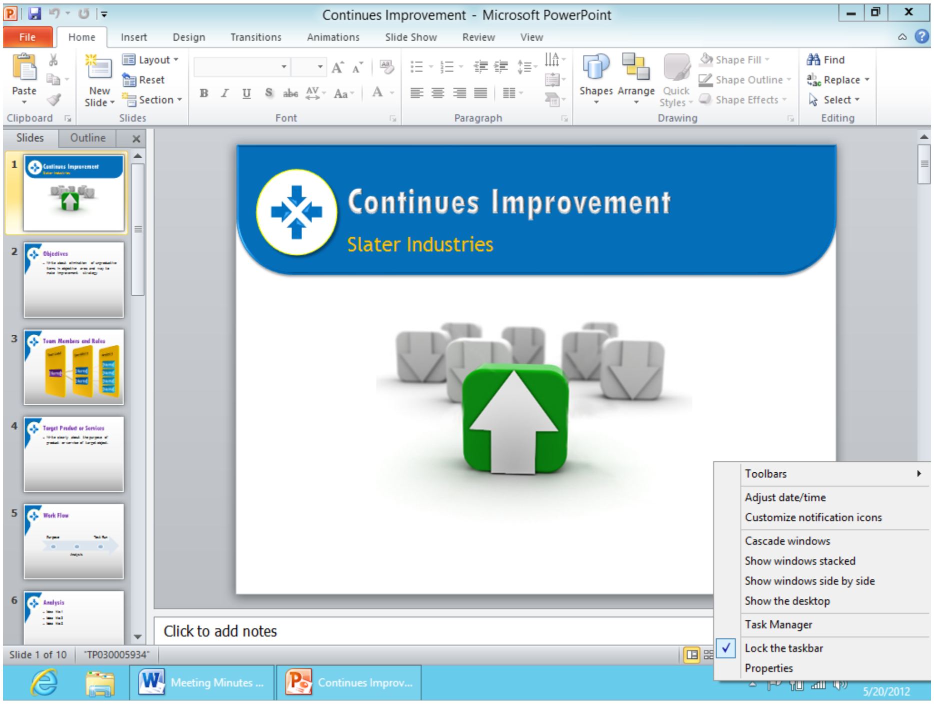
The last (rightmost) item in the Alt+Tab window represents the desktop rather than an open program. If you release the Alt key with that selected, all windows are minimized to the taskbar. But you can still bring up any open program by clicking its taskbar button.

Arranging program windows

You can use options on the taskbar shortcut menu to arrange all currently open program windows. To get to that menu, right-click an empty portion of the taskbar, or right-click the clock in the lower-right corner of the screen. Figure 4.13 shows the options on the menu.

FIGURE 4.13

Taskbar shortcut menu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Toolbars
Adjust date/time
Customize notification icons
Cascade windows
Show windows stacked
Show windows side by side
Show the desktop
Task Manager
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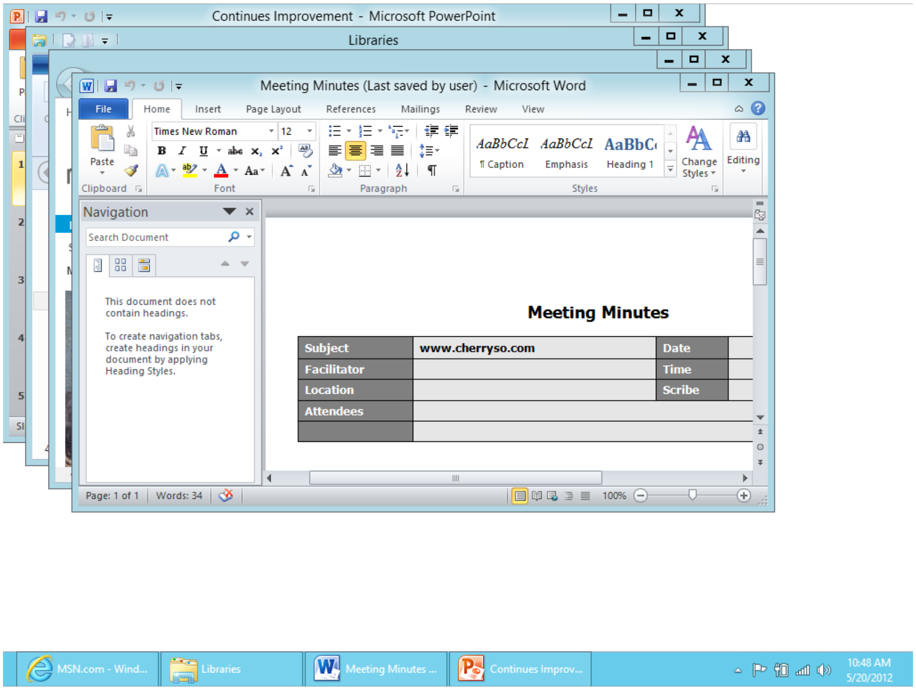
The four options that apply to program windows on the desktop are similar to the options you get when you right-click a taskbar button that represents multiple instances of one program:

- **Cascade Windows:** Stacks all the open windows like sheets of paper, fanned out so that all their title bars are visible, as in Figure 4.14.
- **Show Windows Stacked:** Arranges the windows in rows across the screen, or as equal-sized tiles.
- **Show Windows Side By Side:** Arranges the windows side by side. As with the preceding option, if you have too many open windows to show that way, they'll be displayed in equal-sized tiles.

- **Show The Desktop:** Minimizes all open windows so that only their taskbar buttons are visible. You can see the entire desktop at that point. To bring any window back onto the screen, click its taskbar button. To bring them all back, right-click the clock or taskbar again and choose Show Open Windows.

FIGURE 4.14

Cascaded program windows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The only way to truly appreciate these options is to try them out for yourself. Open two or more programs. Then try each of the options described to see their effects on your open program windows.

Sizing program windows

As a rule, program windows can be any size you want them to be, but this rule has a few exceptions. For example, the tiny Calculator program can't be sized at all. Some programs, such as Windows Media Player and Windows Media Center, will shrink down only so far. But in general, most open program windows can appear in three categories of sizes:

- Maximized, in which the program fills the entire screen above the taskbar, covering the desktop
- Minimized, in which only the program's taskbar button is visible, and the program window takes up no space on the desktop
- Any size in between those two extremes

Often, you'll want to work with two or more program windows at a time. Knowing how to size program windows is a critical skill for doing so, because working with multiple program windows is difficult if you can't see at least some portion of each one.

Maximize a program window

A maximized program window enlarges to its greatest window size, which in many cases causes it to fill all the space above the taskbar. This makes it easy to see everything inside the program window. If a program window isn't already maximized, you can maximize it in several ways:

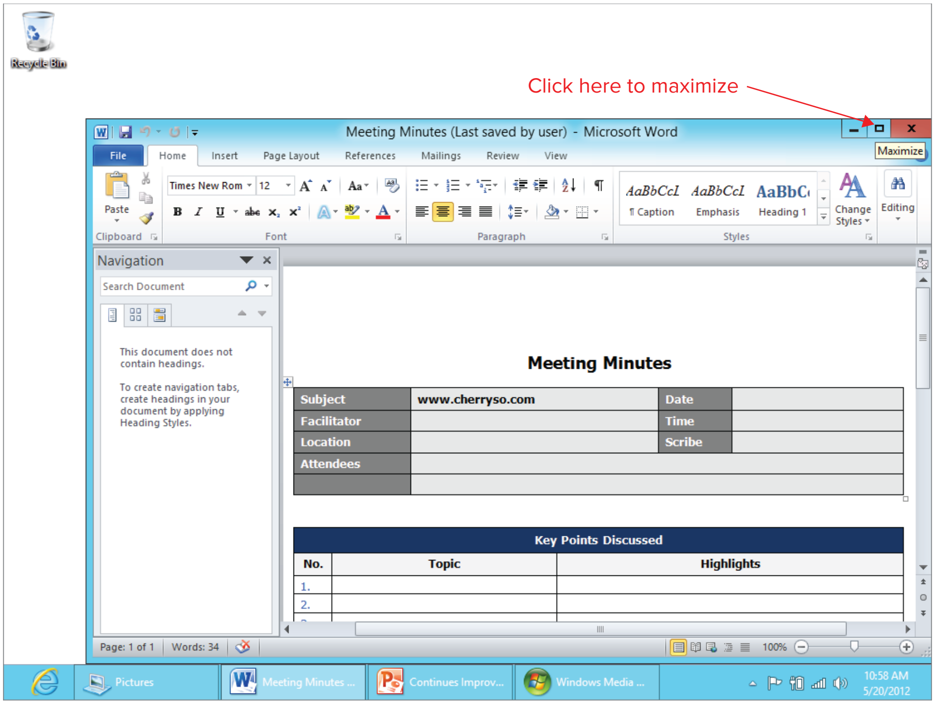
- Click the Maximize button in the program's title bar (see Figure 4.15).
- Grab the title bar and move the window to the top of the screen. Pause for a moment and then release the mouse button. The window maximizes.
- Double-click the program's title bar.
- Click the upper-left corner of the window you want to maximize and choose Maximize. Optionally, right-click anywhere near the center top of the window and choose Maximize.

TIP

Remember, few buttons on the screen show their name. But you can find out a button's name just by touching the button with the tip of the mouse pointer.

FIGURE 4.15

Maximize button in a title bar



Click here to maximize

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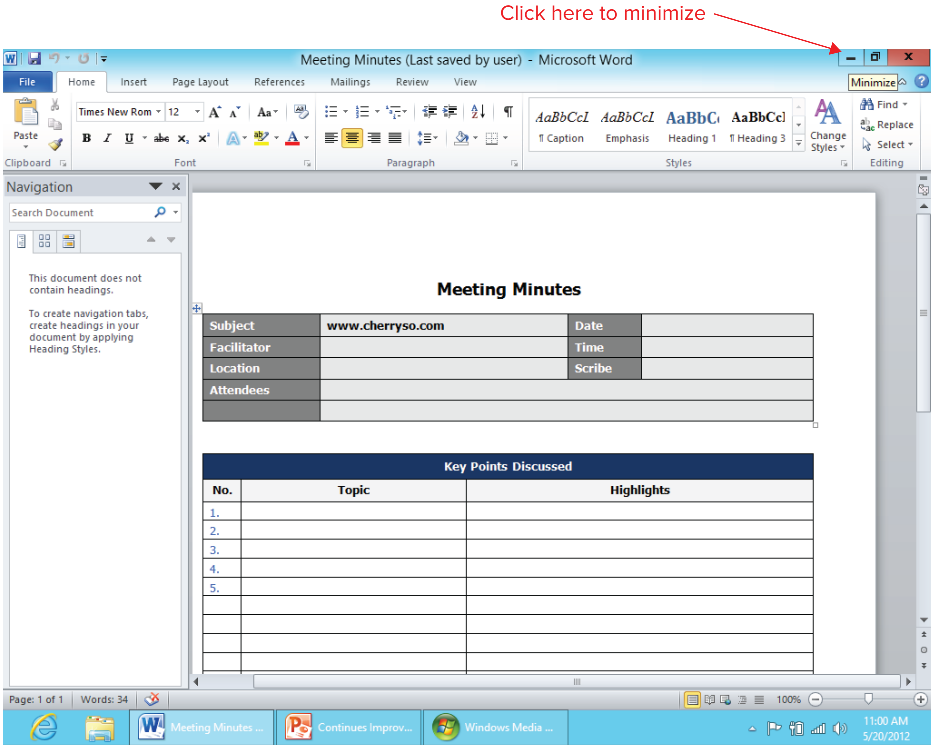
Minimize a program window

If you want to get a program window off the screen temporarily without losing your place, minimize the program window. When you minimize the program window, the program remains running. However, it takes up no space on the screen and therefore can't cover anything else on the screen. When minimized, only the window's taskbar button remains visible. You can minimize a window in several ways:

- Click the Minimize button in the program's title bar (see Figure 4.16).
- Click the upper-left corner of the window you want to minimize (or right-click anywhere near the center top of the window) and choose Minimize.
- Click the program's taskbar button once or twice. (If the program isn't in the active window, the first click just makes it the active window. The second click then minimizes the active window.)
- Right-click the program's taskbar button or title bar and choose Minimize.

FIGURE 4.16

Minimize button in a title bar



Click here to minimize

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Size at will

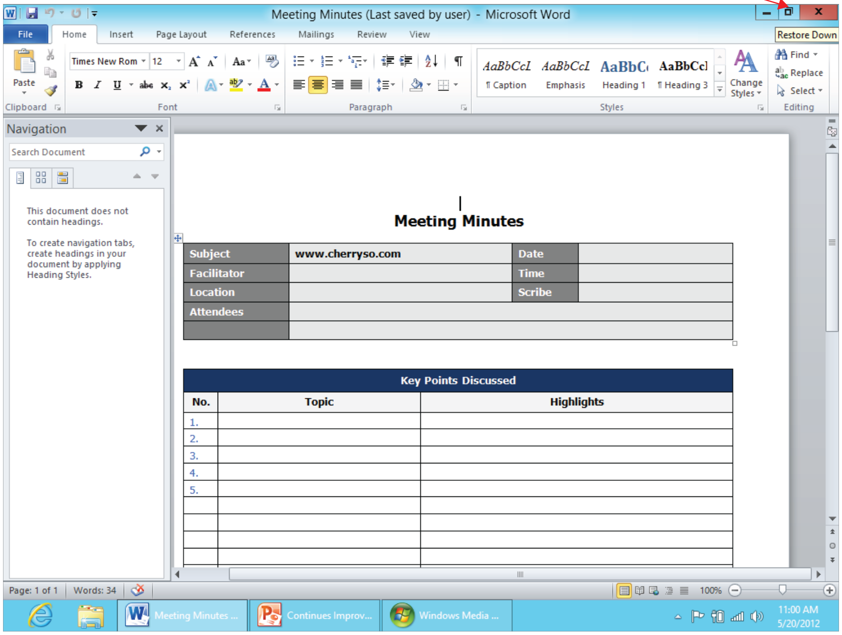
Between the two extremes of maximized (hog up the entire desktop) and minimized (not even visible on the desktop), most program windows can be any size you want them to be. The first step to sizing a program window is to get it to an in-between size so that it's neither maximized nor minimized. To do that:

- If the program window is currently minimized, click its taskbar button to make it visible on the screen.
- If the program window is currently maximized, double-click its title bar or click its Restore Down button to shrink it down a little. Figure 4.17 shows the tooltip that appears when you point to the Restore Down button. Optionally, use the Cascade Windows option described earlier to get all open program windows down to an in-between size.

FIGURE 4.17

The Restore Down button in a maximized program window

Click here to restore down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Minimize Versus Close

Everything that's "in your computer," so to speak, is actually a file on your hard disk. The stuff on your hard disk is always there, whether the computer is on or off. When you open an item, two things happen. The most obvious is that the item becomes visible on the screen. What's not so obvious is the fact that a copy of the program is also loaded in the computer's memory (RAM).

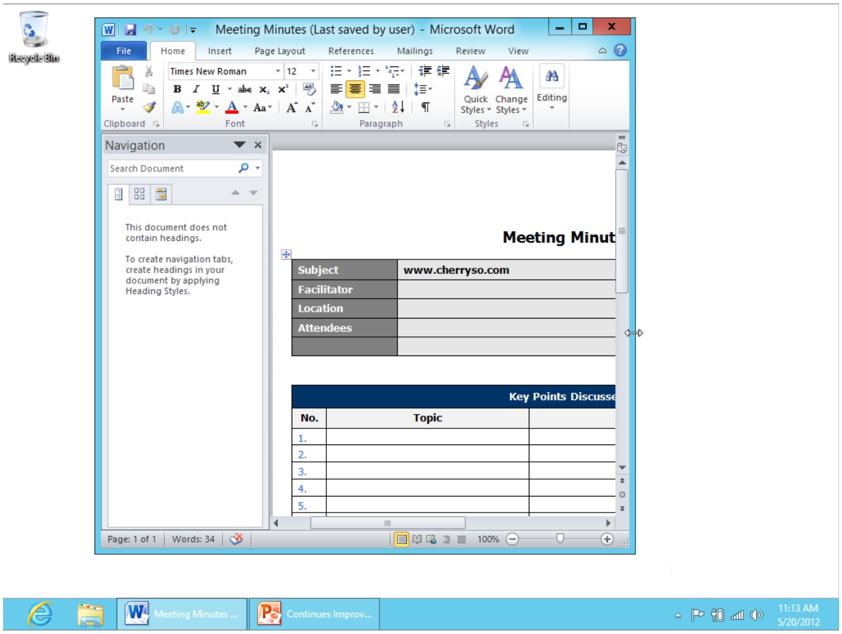
When you minimize an open window, the program is still in memory. The only way you can tell that is by the fact that the program's taskbar button is still on the taskbar. When you want to view that program window, you just click its taskbar to make it visible on the screen again. It shows up looking exactly as it did before you minimized it.

When you close a program, its window and taskbar button both disappear, and the program is also removed from the RAM (making room for other things you might want to work with). The only way to get back to the program is to restart it from its icon. However, this new program window will be an entirely new instance of the program, unrelated to how things looked before you closed the program.

After the program window is visible but not hogging up the entire screen, you can size it to your liking by dragging any edge or corner. You have to get the tip of the mouse pointer right on the border of the window you want to size so that the pointer turns into a two-headed arrow, as in Figure 4.18.

FIGURE 4.18

Mouse pointer positioned for sizing a window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When you see the two-headed arrow, hold down the left mouse button without moving the mouse. After the mouse button is down, drag in the direction you want to size the window. Release the mouse button when the window is the size you want.

You can also size a program window using the mouse and the keyboard. Again, the program window has to be at some in-between size to start with. Also, note that you always begin the process from the program window's taskbar button. Here are the steps:

1. Click the program window's control menu button (upper-left corner of the window) and choose Size.
2. Press the navigation arrow keys (←, →, ↑, ↓) until the window (or the border around the window) is the size you want.
3. Press the Enter key.

Moving a program window

You can easily move a program window about the screen just by dragging its title bar. However, you can't start with a minimized window. You have to get the program window to an in-between size or maximized size before you even get started. Then just get the mouse pointer somewhere near the top center of the window you want to move, hold down the left mouse button, and drag the window around. Release the mouse button when the window is where you want it on the desktop. This works for both in-between sized and maximized windows.

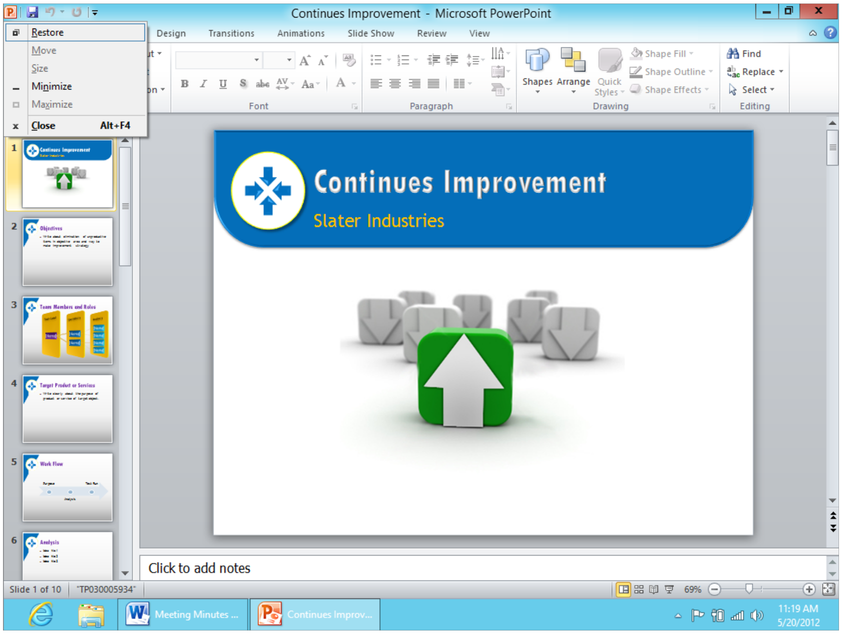
Dialog boxes work the same way. You can't size or minimize a dialog box, and dialog boxes don't have taskbar buttons. But you can easily drag a dialog box around the screen by its title bar.

Moving and sizing from the keyboard

As you've seen, most of the techniques for moving and sizing program windows rely on the mouse. There are some keyboard alternatives, but they're not available in all program windows. The only way to find out whether these work in the window you're using at the moment is to press Alt+Spacebar and see whether a system menu drops down from the upper-left corner, as in Figure 4.19.

FIGURE 4.19

System menu from a program window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If you see the menu, you just have to press the underlined letter from the menu option you want to select. For example, press the letter **x** to Maximize or **n** to Minimize. If you press **m** to Move or **s** to Size, you can then use the arrow keys (←, →, ↑, ↓) to move or size the window. Then press Enter when the window is positioned or sized to your liking.

TIP

Sometimes, a window can be outside the viewable area of the desktop. This can happen if you extend your Windows desktop onto another monitor but that monitor isn't connected or turned on. If you can press Alt+Tab and determine that a program is running, but you can't see it on the desktop, press Alt+Tab and select the program (make it active). Then, press Alt+Spacebar, press M, and use the arrow keys on the keyboard to move the window into a viewable area of the desktop.

Closing a Program

When you're finished using a program, you should close it. Every open program and document consumes some resources, mostly in the form of using memory (RAM). When RAM is full, the computer has to start using *virtual memory* more often, which is basically space on the hard disk configured to look like RAM to the computer.

RAM has no moving parts and, thus, can feed stuff to the processor (where all the work takes place) at amazing speeds. A standard hard disk has moving parts and is much, much slower. Newer solid state drives do not rely on moving parts, but you still have speed differences between RAM and solid state drives. As soon as Windows has to start using virtual memory, everything slows down. So, you really don't want to have a bunch of stuff you're not using any more open and consuming resources.

There are many ways to close a program. Use whichever of the following techniques is most convenient for you, because they all produce the same result—the program is removed from memory, and both its program window and taskbar button are removed from the screen:

- Click the Close (X) button in the program window's upper-right corner.
- Right-click the title bar across the top of the program window and choose Close.
- Choose File ➪ Exit from the program's menu bar, if the program provides a File menu.
- Right-click the program's taskbar button and choose Close Window.
- If the program is in the active window, press Alt+F4.

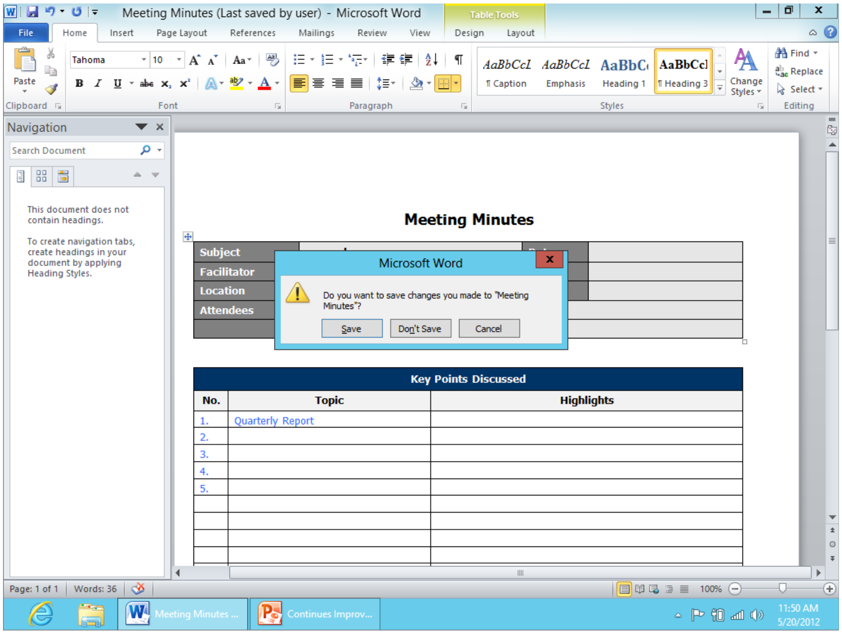
TIP

You can close a Windows 8 app by grabbing the top of the app window until the mouse pointer changes to a double-sided hand. Then drag the window down to the bottom of the screen.

If you were working on a document in the program and have made changes to that document since you last saved it, the program will (one hopes) ask in a message box like the example in Figure 4.20 whether you want to save those changes.

FIGURE 4.20

Last chance to save a document



Meeting Minutes (Last saved by user) - Microsoft Word

Microsoft Word

Do you want to save changes you made to "Meeting Minutes"?

Save | Don't Save | Cancel

Meeting Minutes

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Never take that dialog box lightly because whichever option you choose is final, and there's no going back and changing your mind. Your options are as follows:

- **Save/Yes:** The document is saved in its current state; both the document and the program close.
- **Don't Save/No:** Any and all changes you made to the document since you last saved it will be lost forever. Both the document and the program close.
- **Cancel:** The program and document both remain open and on the screen. You can then continue work on the document and save it from the program's menu bar (choose File ➪ Save).

Using the Notification Area

Over on the right side of the taskbar is the Notification area (also called the *system tray* or *tray*). Each icon in the Notification area represents a program or service that's running in the background. For example, antivirus and antispyware programs often show icons in the Notification area so that you know they're running.

To conserve space on the taskbar, Windows 8 gives you the option of hiding inactive icons. When inactive icons are hidden, you see a button with up and down arrows on it at the left side of the Notification area. Click the button to see icons that are currently hidden.

As with any icon or button, you can point to an icon in the Notification area to see the name of that icon. Right-clicking an icon usually provides a context menu of options for using the item. Clicking or double-clicking the icon usually opens a program window that's associated with the running background service.

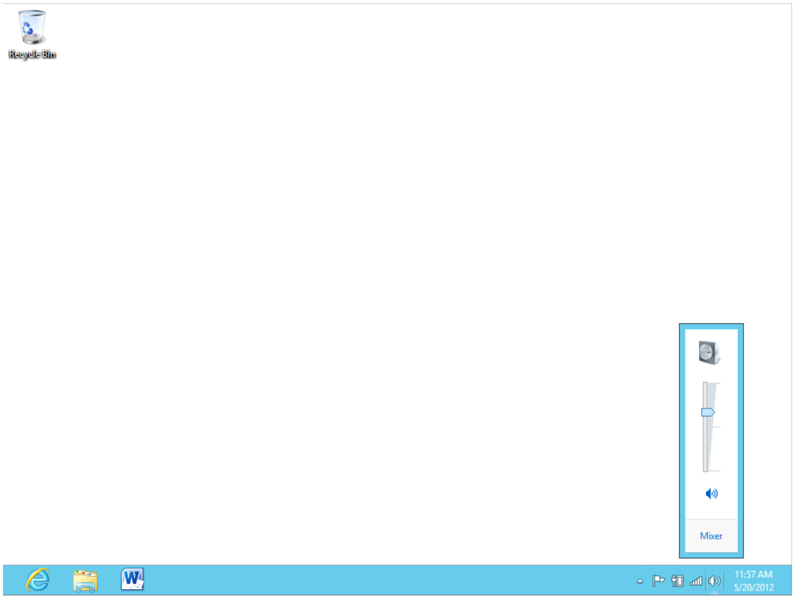
NOTE

A context menu is a menu that offers commands that are in the context of the selected item. In other words, the commands apply specifically to the selected item, not to other items. To open a context menu, right-click an item (such as an icon).

For example, the Volume icon provides a simple service: It lets you control the volume of your speakers when sound is playing. To change the volume, you click the icon and then drag the slider (shown in Figure 4.21) up or down. Optionally, you can mute the speakers by choosing the button at the bottom of the slider. Click it again to remove the mute. The Mixer option opens a window in which you can control the volume of different kinds of sounds independently.

FIGURE 4.21

Volume control slider



The icons in the Notification area don't represent programs that you *can* run. They represent programs that *are* running. The icon simply serves as a notification that the program is running, although in most cases, the icon also provides options for closing the program or changing how it runs. Different computers have different Notification area icons. The following are some common examples:

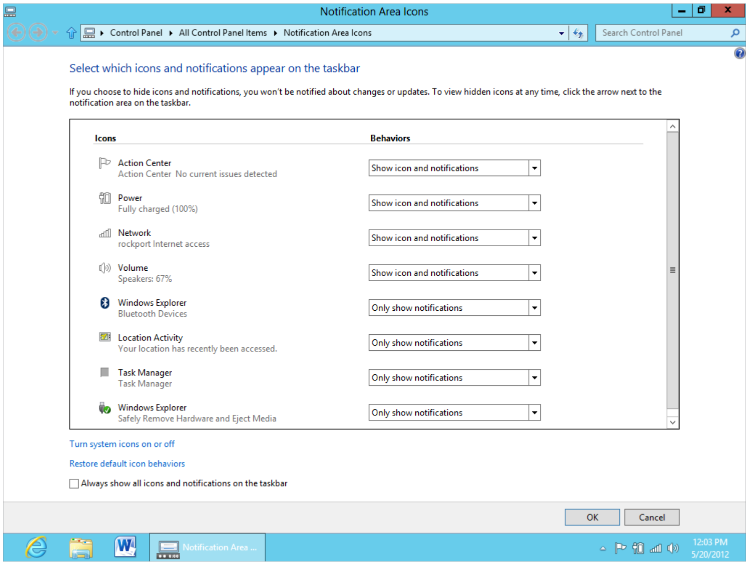
- **Network Connections:** You might see an icon that lets you disconnect from the network, view and connect to wireless networks, and open the Network and Sharing Center.
- **Security programs:** Programs that protect your system from malware (such as viruses and spyware) often display icons in the Notification area.
- **Updates:** An icon notifies you when updates are available for downloading or installing.
- **Safely Remove Hardware:** If you have a USB device connected to your computer, the Safely Remove Hardware icon lets you disable the device before removing it, which you do to make sure that the device doesn't disconnect while it's still in use.

Showing/hiding notification icons

You can choose for yourself which Notification area icons you do and don't want to see at any time. You rarely need to see them all, so you can hide some from yourself just to conserve the taskbar space they would otherwise take up. To make choices about those icons, right-click the clock or blank area of the tray and choose Customize Notification Icons. The Notification Area Icons dialog box, shown in Figure 4.22, opens.

FIGURE 4.22

Notification Area Icons dialog box



Select which icons and notifications appear on the taskbar

If you choose to hide icons and notifications, you won't be notified about changes or updates. To view hidden icons at any time, click the arrow next to the notification area on the taskbar.

Icons	Behaviors
Action Center Action Center No current issues detected	Show icon and notifications
Power Fully charged (100%)	Show icon and notifications
Network rockport Internet access	Show icon and notifications
Volume Speakers: 67%	Show icon and notifications
Windows Explorer Bluetooth Devices	Only show notifications
Location Activity Your location has recently been accessed.	Only show notifications
Task Manager Task Manager	Only show notifications
Windows Explorer Safely Remove Hardware and Eject Media	Only show notifications

Turn system icons on or off

Restore default icon behaviors

☐ Always show all icons and notifications on the taskbar

The Notification Area Icons dialog box lists items that are currently active, as well as inactive items that were active in the past. You can choose if and how you want to display an icon by selecting a choice from the Behaviors drop-down list to the right of an item's name. Your options are:

- **Show Icon And Notifications:** The item is always visible in the Notification area.
- **Hide Icon And Notifications:** The item is always hidden.
- **Only Show Notifications:** The icon is visible only when it's active and serving some purpose.

As always, what you choose to show or hide is entirely up to you. Just make your selections and click OK in each of the open dialog boxes.

If you always want all Notification area icons to be visible, follow these steps:

1. Right-click the current time in the lower right of the screen and choose Customize Notification Icons.
2. In the Notification Area Icons dialog box that opens, select Always Show All Icons And Notifications On The Taskbar check box.
3. Click OK.

Chapter 13 discusses additional techniques for customizing the desktop, taskbar, and Notification area.

Responding to notification messages

Icons in the Notification area may occasionally display messages in a speech balloon. Many messages just provide some feedback and don't require any response from you. These kinds of messages generally fade away on their own after a few seconds. But you can also close the message by clicking the Close (X) button in its upper-right corner.

Icons or messages that show a red X icon, like the one in Figure 4.23, are security-related. You can click the balloon or message title to get more information about the items.

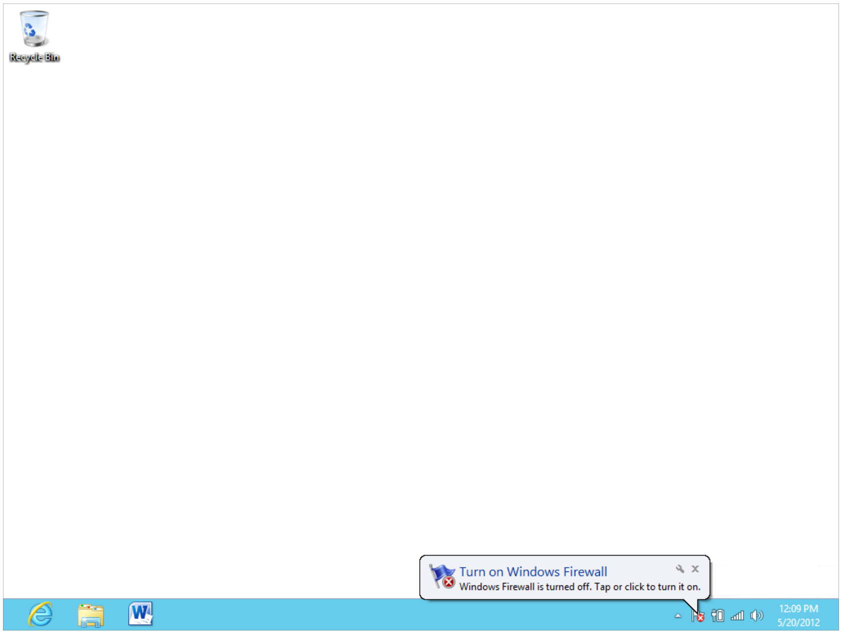
Chapters 9 through 11 discuss security in some depth.

Using scroll bars

Scroll bars appear in program windows whenever the window contains more information than it can fit. You may not see any on your screen right now. But don't worry about that. The trick is to recognize them when you do see them, to know what they mean, and to know how to work them. Figure 4.24 shows an example of a vertical scroll bar and a horizontal scroll bar.

FIGURE 4.23

A security warning from the Notification area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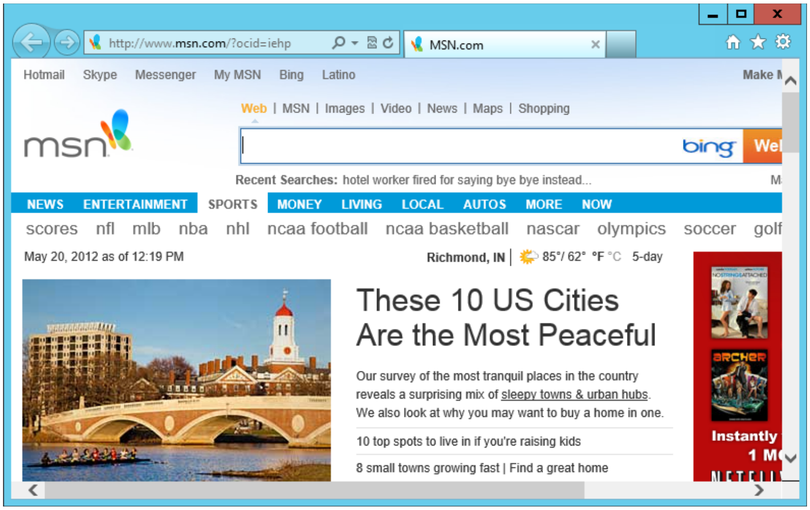
Turn on Windows Firewall
Windows Firewall is turned off. Tap or click to turn it on.

FIGURE 4.24

Examples of scroll bars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ncaa basketball
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When you see a scroll bar, it means that there's more to see than what's currently visible in the window. The size of the scroll box (the bit inside the scroll bar area that looks like a long button) relative to the size of the scroll bar tells you roughly how much more there is to see. For example, if the scroll bar is about 10 percent the size of the bar, it means you're seeing only about 10 percent of all there is to see.

To see the rest, you use the scroll bar to scroll through the information. You have basically three ways to use scroll bars:

- Click a button at the end of the scroll bar to move a little bit in the direction of the arrow on the button.
- Click an empty space on the scroll bar to move the scroll box along the bar toward the place where you clicked. That moves you farther than clicking the buttons would.
- Drag the scroll box in the direction you want to scroll. To drag, place the mouse pointer on the button and hold down the left mouse button while moving the mouse in the direction you want to scroll.

If your mouse has a wheel, you can use that to scroll as well. If the window shows a vertical scroll bar, spinning the mouse wheel scrolls up and down. If the window shows only a horizontal scroll bar, spinning the mouse wheel scrolls left and right. Some mice have a horizontal scroll button (or wheel) that you can push left or right to scroll horizontally.

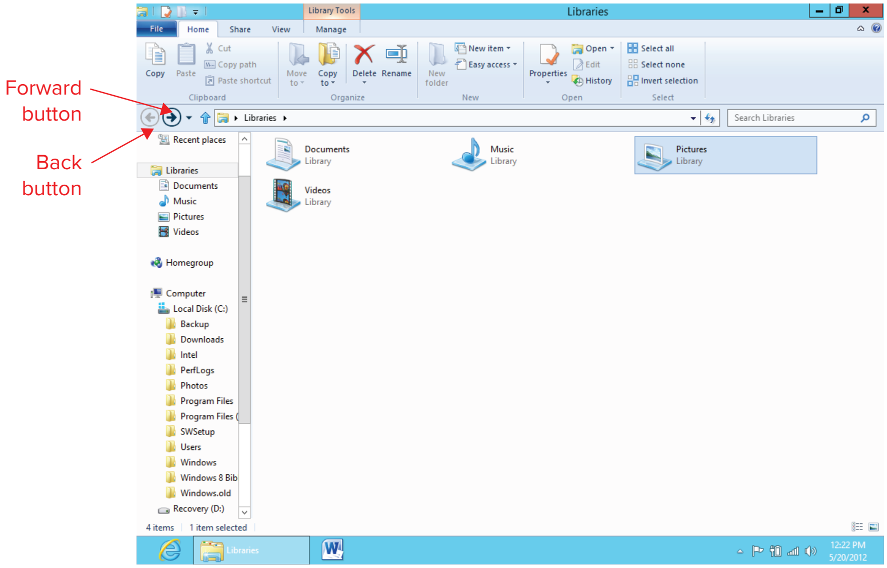
You can also use the keyboard to scroll up and down. But understand that the scroll bars work only in the active window (the window that's on the top of the stack). If necessary, first click the window or press Alt+Tab to bring it to the top of the stack. Then you can use the up and down arrow keys (↑ and ↓) to scroll up and down slightly. Use the Page Up (PgUp) and Page Down (PgDn) keys to scroll up and down in larger increments. Press the Home key to scroll all the way to the top (or all the way to the left). Press the End key to scroll all the way to the end.

Using Back and Forward buttons

Back and Forward buttons help you navigate through multiple pages of items. As with scroll bars, they appear only when useful, so don't expect to see them on your screen right now, or all the time. At times, they may be *disabled* (dimmed), as at the top of Figure 4.25. At other times they are *enabled* (not dimmed). Also, you won't find Back and Forward buttons in every program window.

FIGURE 4.25

Back and Forward buttons


Forward button
Back button
Library Tools
Libraries
File
Home
Share
View
Manage
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Libraries
Search Libraries
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Backup
Downloads
Intel
PerfLogs
Photos
Program Files
Program Files (
SWSetup
Users
Windows
Windows 8 Bib
Windows.old
Recovery (D:)
Documents Library
Music Library
Pictures Library
Videos Library
4 items
1 item selected
Libraries
12:22 PM
5/20/2012

A disabled button isn't broken. When an item is disabled, it's just not appropriate at the moment. For example, when you first open a window, both buttons may be disabled because you have no page to switch to yet. When you click a link that takes you to another page, the Back button is then enabled because now you *do* have a page to go back to (the page you just left). After you go back to the previous page, the Forward button is enabled because now you have a page to go forward to — the page you just left.

When a button is enabled, you just click it to go back or forward. When a button is disabled, clicking it has no effect.

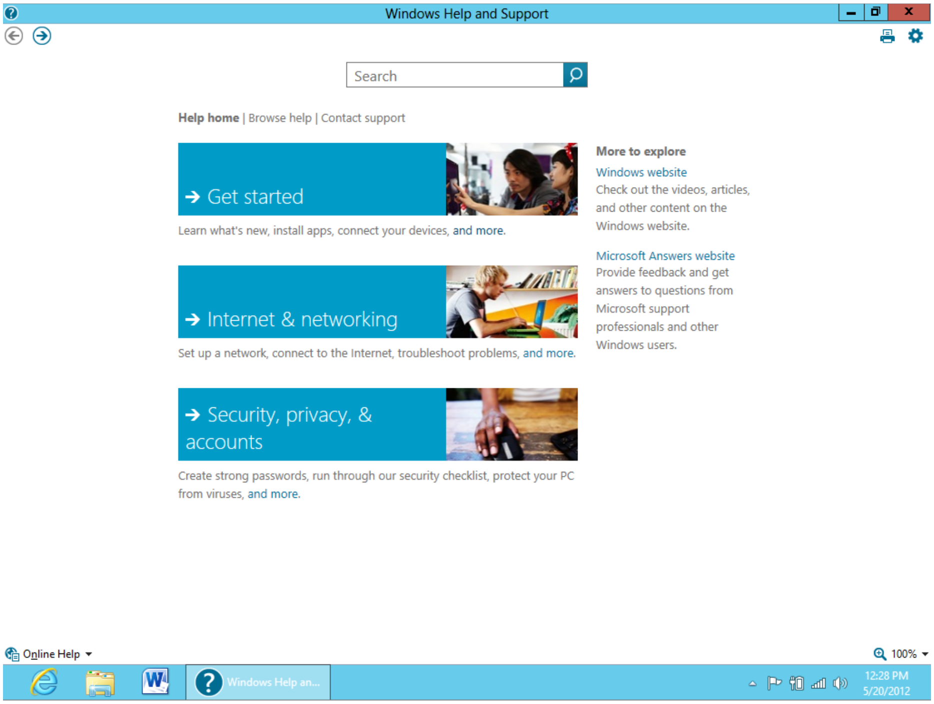
Quick Help for Getting Started

Windows Help is a great resource to help you learn about Windows and how to work with your computer. To open Help, press the F1 key.

If you're new to Windows, the Get Started item in Help provides a quick overview of Windows features and concepts (see Figure 4.26).

FIGURE 4.26

Windows Basics help



Help home | Browse help | Contact support

→ Get started

Learn what's new, install apps, connect your devices, and more.

→ Internet & networking

Set up a network, connect to the Internet, troubleshoot problems, and more.

→ Security, privacy, & accounts

Create strong passwords, run through our security checklist, protect your PC from viruses, and more.

More to explore

Windows website

Check out the videos, articles, and other content on the Windows website.

Microsoft Answers website

Provide feedback and get answers to questions from Microsoft support professionals and other Windows users.

Each short chunk of blue text is a link that takes you to a help topic. Click any link to see that topic. In many of the pages, you need to use the scroll bar to scroll up and down through all the text. You can use the Back and Forward buttons, when enabled, to scroll through pages you've already visited. Using the Help feature in this manner gives you some practice with skills you've learned in this chapter. At the same time, it can help you reinforce what you already know and teach you some things you haven't learned yet.

To leave the Help window, just close it (click the Close (X) button in its upper-right corner). See Chapter 7 for more information on using the Help system.

TIP

You'll often see a little blue button with a white question mark in program windows. That's the Help button. You can click it for information.

Logging Off, Shutting Down

Here's a question a lot of people ask: "Should I shut down my computer if I won't be using it for a while, or should I just leave it on?" Everybody has an opinion about this. So here's ours: It doesn't matter. It's fine to leave your computers running. Many people shut down their computers only when they need to, such as when installing certain types of hardware. Aside from that, their computers are on, and online, 24 hours a day, 7 days a week. With today's green PCs, turning off the computer every day isn't as important as it once was. Perhaps more important, leaving the computer on means you can start working with it almost right away, rather than waiting for it to boot.

NOTE

Windows 8 provides a much quicker startup process than previous versions of Windows. In some cases, the boot-up time is less than 8 seconds, which is substantially quicker than Windows 7.

The Power button in Windows 8 is located in a different location than previous Windows versions. Instead of being located on the Start menu (which is no longer available, you find it in the Settings screen by choosing Settings from the Charms Bar, shown in Figures 4.27 and 4.28. Understand that turning off a PC isn't quite the same as turning off a TV or radio. You usually don't want to just hit the main power switch to shut down while you have things open and unsaved. You want to close everything first. Then click the Power button and choose Shut Down.

FIGURE 4.27

Power button available while on the desktop

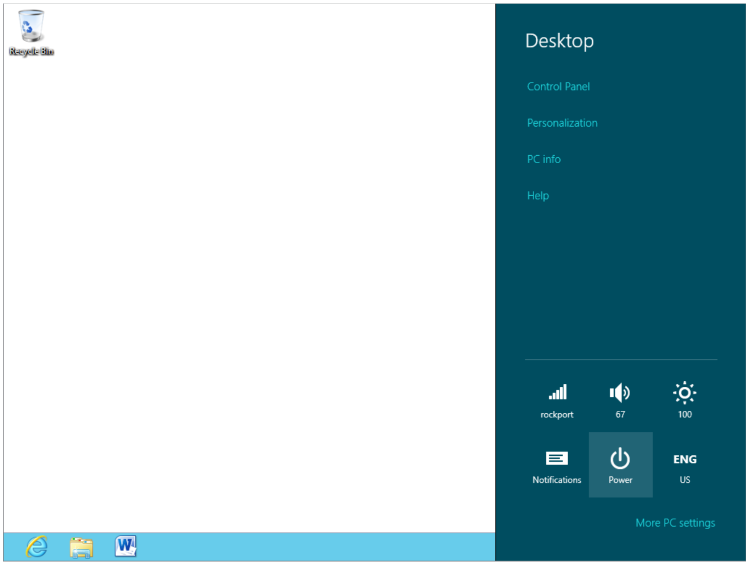
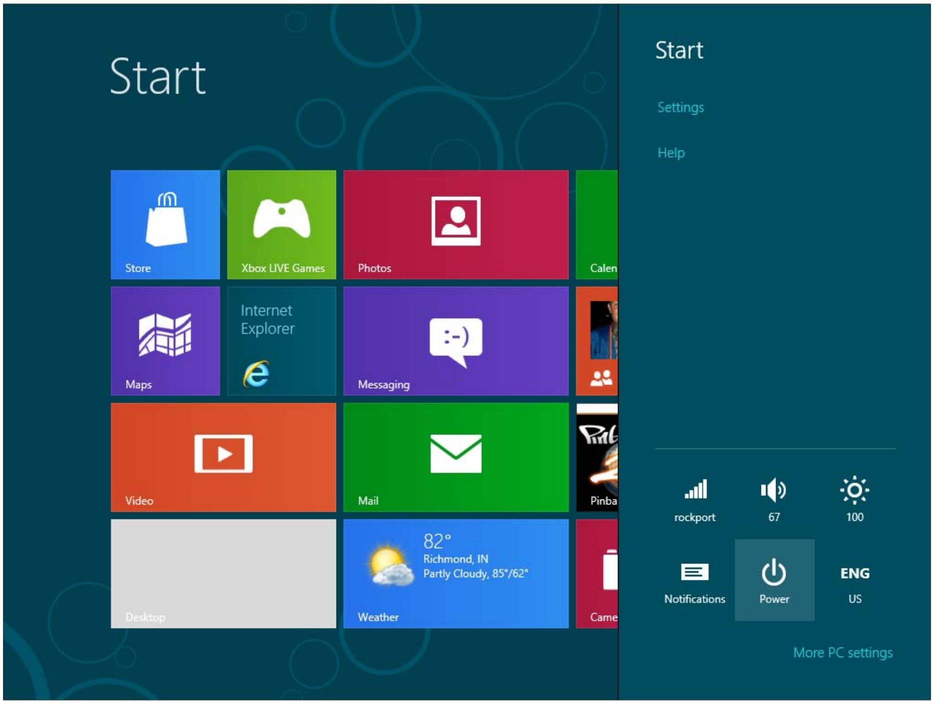


FIGURE 4.28

Power button available while on the Start screen


Start
Store
Xbox LIVE Games
Photos
Calen
Maps
Internet Explorer
Messaging
Video
Mail
Pinba
Desktop
82°
Richmond, IN
Partly Cloudy, 85°/62°
Weather
Came
Start
Settings
Help
rockport
67
100
Notifications
Power
ENG
US
More PC settings

Although shutdown is much faster in Windows 8 than previous versions, don't expect the computer to turn off immediately. It takes a few seconds for Windows to get everything closed up and ready to shut down. On most computers, you don't have to do anything else. The computer will eventually shut itself down completely.

Stuff You Can Do with a Computer

There's so much you can do with Windows 8 and your computer, we hardly know where to start. So we'll just throw some ideas out there and point you to the chapter where that topic is discussed. Of course, you can get much more detailed information about the contents of this book from the Table of Contents up front. And you can look things up in the Index at the back of the book. For the folks who are just getting started and don't know quite what to do next, here are some quick suggestions:

- **Set up parental controls:** Chapter 6
- **Get help:** Chapter 7

- **Personalize the new Windows 8 interface:** Chapter 12
- **Personalize the screen to your own style:** Chapter 13
- **Chat online:** Chapter 17
- **Setup social networking apps:** Chapter 19
- **Organize, fix, and print photos:** Chapter 23
- **Collect music and make your own CDs:** Chapter 24

The terms and skills you've learned in this chapter should be enough to get you started on whichever topic looks most interesting. You will need an Internet connection for e-mail and the web. But you should be able to do everything else using just Windows 8. You don't need to buy extra programs to do those things.

Wrap-Up

That about wraps it up for the main terminology and basic skills. Much of what you've learned in this chapter is the kind of stuff most people assume you already know. You may have to read the chapter a few times and practice things before it all sinks in. Use the Windows help for more information and for hands-on practice.

Here's a quick summary of the most important points covered in this chapter:

- The Windows desktop is the primary place you'll do your work.
- Unless you have a touch-screen device (such as a mobile phone or tablet), you'll use your mouse and keyboard to operate the computer.
- Most of your work will involve opening and using programs and apps.
- You can start any program that's installed on your computer from the Start screen.
- Each open program appears in its own program window on the desktop. Program windows stack up like sheets of paper.
- Each open program window has a corresponding taskbar button. The taskbar buttons help you switch from one open program window to another.
- You can move and size program windows to see exactly what you need to see, when you need to see it.
- When you finish using your computer and want to shut it down, don't go straight for the main power switch. Instead, click the Settings item from the Charms Bar, choose Power, and then click Shut Down.

That's enough for now about the desktop and programs. These days, with just about everyone using his or her computer to access the Internet, security is a major issue. So we begin to address that topic in Chapter 5 with a discussion of user accounts and how they relate to computer security.

CHAPTER

5

Sharing and Securing with User Accounts

IN THIS CHAPTER

- Why user accounts?
- Creating and managing user accounts
- Using user accounts
- Recovering forgotten passwords
- User account control secrets
- Managing credentials and online IDs

Every person who uses your computer is called a user, and each user can have his or her own user account on the computer. Giving each person a user account is a lot like giving each person his or her own separate PC, but a lot cheaper. Each user can personalize the desktop and other settings. Each person can have his or her own separate collection of pictures, music, videos, and other files. Each user can also set up his or her own separate e-mail account.

User accounts allow parents to create and enforce parental controls in Windows 8. This is a great tool for parents who can't always monitor when and how children use the computer. Parental controls allow you to control and monitor children's computer use 24 hours a day, 365 days a year, even when you're not around to do it yourself.

User accounts also add a level of security to your computer. Many security breaches occur not because of a problem with the computer or Windows, but because the user is in an account that grants malware (bad software) *permission* to do its evil deeds. Of course, people don't realize that they're granting permission because the program doesn't ask for permission. It gets its permission automatically from the type of user account you're currently logged into.

Creating and managing user accounts is easy. But before getting into the specifics of all that, let's take a look at how you, as a user, experience user accounts.

Logging In and Out of User Accounts

When you start your computer, Windows 8 presents you with the Lock Screen. This is a screen that shows a background picture and has the capability to run background apps such as a calendar app or mail app before you log in. To advance beyond the Lock Screen, roll the mouse wheel down, gesture down, or press Enter. You are then shown the login screen. At this screen, the last user logged in at that computer will display. If you have multiple user accounts on your computer, you can select to log in using the previous user account (if that's you), or select a different user.

To log in, enter the password that protects that account from unauthorized entry. If you want to log in using a different login name, click the left arrow to see a list of all the users who have logged into this computer. Click the user you want to log in as and then enter that user's login credentials to start Windows 8.

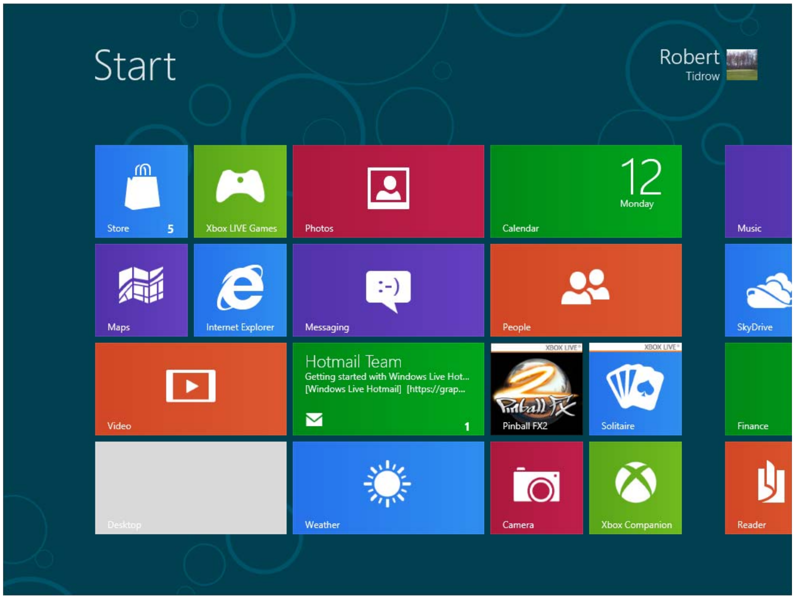
For accounts that do not have an associated password, simply click the name for that user and Windows loads to the Windows 8.

Where am I now?

To see the name of the user account you're currently logged into, look at the top-right corner of the Windows 8. In Figure 5.1, the user account name is Robert Tidrow, but it could be any username set up on your computer. If Windows 8 came pre-installed on your computer, it might be a generic name, such as Owner or User.

FIGURE 5.1

Username on the new Windows 8 Start screen


Start
Robert
Tidrow
Store
5
Xbox LIVE Games
Photos
12
Monday
Calendar
Music
Maps
Internet Explorer
:-)
Messaging
People
SkyDrive
Video
1
XBOX LIVE
Pinball FX2
XBOX LIVE
Solitaire
Finance
Desktop
Weather
Camera
Xbox Companion
Reader

Hotmail Team
Getting started with Windows Live Hot...
[Windows Live Hotmail] [https://grap...

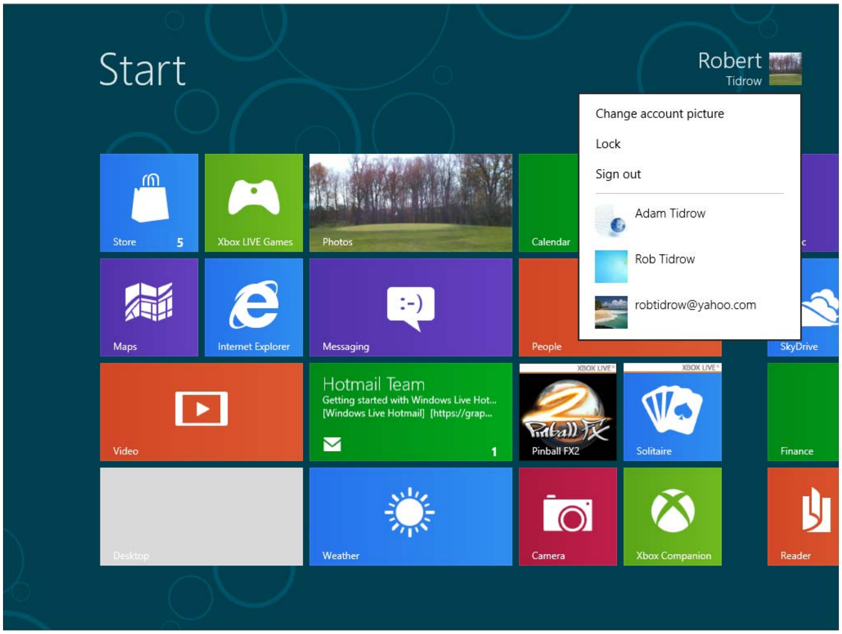
Switching accounts

You have a few different ways to switch from the account you're currently logged into to another account (assuming that you have more than one user account on your computer already).

The quickest way is to display the Start screen and then click your account name at the top of the screen. Figure 5.2 shows an example of a list of users. You can use the following methods to change users:

FIGURE 5.2

Available users that can log into the current computer


Start
Robert
Tidrow
Change account picture
Lock
Sign out
Adam Tidrow
Rob Tidrow
robtidrow@yahoo.com
Store
5
Xbox LIVE Games
Photos
Calendar
Maps
Internet Explorer
Messaging
People
SkyDrive
Video
Hotmail Team
Getting started with Windows Live Hot...
[Windows Live Hotmail] [https://grap...
1
XBOX LIVE
Pinball FX2
XBOX LIVE
Solitaire
Finance
Desktop
Weather
Camera
Xbox Companion
Reader

- **Click Sign Out:** This option logs you out of Windows and sends you to the Windows startup screen. Press Enter, slide the screen up, or roll the mouse button down to display the sign on screen. Select a username by clicking the back arrow to display all users set up on this computer.
- **Click a username:** When you click your username at the Start screen, all user accounts for your computer appear. Click the name you want to switch to. Windows suspends the current user and displays the login screen for the selected name. Enter the password for that username to continue.

Why Switching Users Can Be Bad

When you switch users, rather than signing the original user out, all the programs and documents on your desktop remain open and in memory. This leaves less working memory for other users in their accounts.

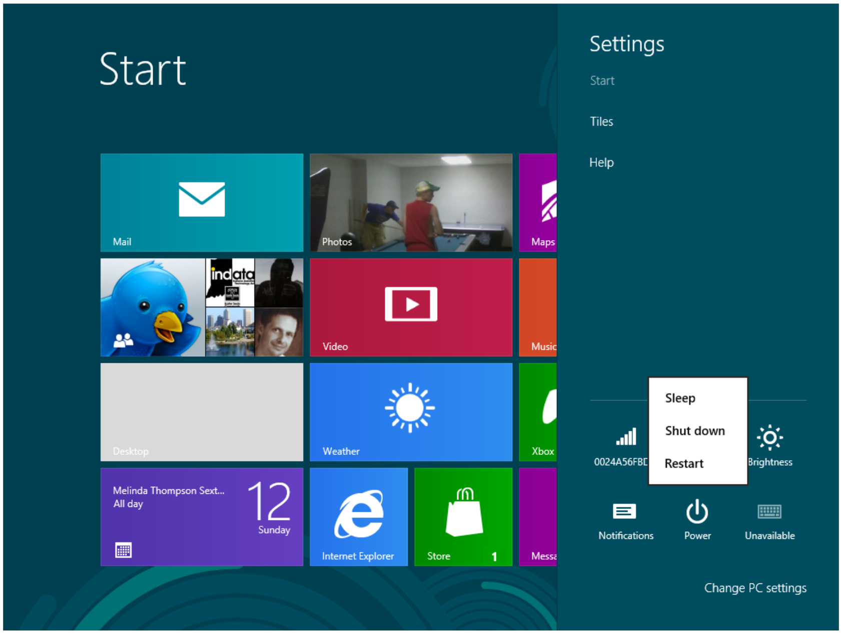
If multiple users consistently switch users to leave their accounts, you end up with an enormous amount of memory tied up all the time. The likely result is that the computer will run much slower for everyone.

Ideally, every user should save all open files, exit all programs, and sign off from his or her account when finished using the computer.

You also can change users by using the Power options. Click the Settings Charm button and then click the Power icon. Three menu options appear, as in Figure 5.3. The options are described in the following list:

FIGURE 5.3

Windows Power options


Start
Mail
Photos
Maps
Video
Music
Desktop
Weather
Xbox
Melinda Thompson Sext...
All day
12
Sunday
Internet Explorer
Store
1
Messa
Settings
Start
Tiles
Help
Sleep
Shut down
Restart
0024A56FBD
Brightness
Notifications
Power
Unavailable
Change PC settings

- **Sleep:** This option saves the system state to disk and powers down the computer, but the computer can be restored more quickly than shutting down and starting up.

- **Shut Down:** This option closes all open programs and shuts down the computer. Press the power button to restart the computer and show the login screen.
- **Restart:** This option closes all programs, shuts down the computer, and then restarts the computer to the login screen.

If your user account isn't password-protected, other people aren't really locked out of your account. Anyone can come along, click your user account name, and be at your desktop. Also, once someone is at your desktop, he can use the User Settings screen to set up a password of his own. Unless he gives you that password, you can be locked out of your own account. In most cases, particularly when your computer is shared with another user or has the potential to be available to others, take precautions and set up a password for your account.

Creating Strong Passwords

We talk about techniques for creating, managing, and password-protecting user accounts, but before we get into the details it might be worthwhile to talk about passwords in general. Not just passwords for user accounts, but for all types of accounts you create, including online accounts.

A password that's easily guessed is a weak password. A strong password is one that's not easily guessed and is immune to *password-guessing attacks*. The two most common forms of password-guessing attacks are the *dictionary attack* and the *brute-force attack*. Both types of attacks rely on special programs that are specifically designed to try to crack people's passwords and gain unauthorized entry to their user accounts.

The dictionary attack tries many thousands of passwords from a dictionary of English terms and commonly used passwords. The brute-force attack tries thousands of combinations of characters until it finds the right combination of characters needed to get into the account.

Admittedly, both types of attacks are rare in a home PC environment. They're also easily frustrated by common techniques such as forcing a person to wait several minutes before trying again after three failed password attempts. Nonetheless, the general guidelines used to protect top-secret data from password-guessing attacks can be applied to any password you create. A strong password is one that meets at least some of the following criteria:

- It is at least eight characters long.
- It does not contain your real name, user account name, pet name, significant date (such as birthday), or any name that's easily guessed by other family members or coworkers.
- It does not contain a word that can be found in a dictionary.
- It contains some combination of uppercase letters, lowercase letters, numeric digits, and symbols (such as !, &, ?, @, and #).

Again, we realize that few of us need Fort Knox–style security on our personal PCs. You don't want to come up with a password that's difficult to remember and a pain to type. But any steps you take to make the password less easy to guess are well worth the effort. Some websites offer *password checkers*, programs that analyze a password and tell you how strong it is. See `https://www.microsoft.com/security/pc-security/password-checker.aspx` for an example. Or go to any search engine, such as `http://www.google.com`, and search for "password checker."

Remembering passwords

The most common problem with passwords is forgetting them after the fact. When you set up a password for a website, you can usually be reminded what the password is just by clicking an "I forgot my password" link at the sign-in page. But there is no such link for passwords that protect your Windows user accounts. Therefore, it's extremely important that you *not* forget your Windows passwords!

Before you password-protect a user account, take the time to come up with a password that you (or the user) can remember. Make sure you use exactly the same uppercase and lowercase letters that you'll be typing. All Windows passwords are always case sensitive, which means uppercase and lowercase letters count!

For example, say you jot down your password as `Tee4me!0` (where that last digit is a zero). But later you type it in as `tee4Me!o` (with the last digit being the letter *o*). Still later, you forget the password and dig out the sheet of paper. The `tee4me!o` you wrote down won't work, because the password is actually `Tee4Me!0`.

CAUTION

On a typewriter, the number 0 is basically the same as an uppercase letter O and the number 1 is basically the same as a lowercase letter l, but that is *not* true of computers. You must use the 1 and 0 keys near the top of the keyboard or on the numeric keypad to type 1 (one) and 0 (zero).

Devising a password hint

With Windows passwords, you can also specify a password hint to help you remember a forgotten password. But still, it's tricky. Anyone who uses your computer can see the password hint. So the hint can't be so obvious that it tells a potential intruder what the password is.

By the same token, the hint might trigger your basic memory of the password. But perhaps not the exact uppercase and lowercase letters you used. It's not a good idea to write down your passwords, because it exposes them to others' access. But, if you need to keep track of multiple passwords, consider using a password-protected Excel spreadsheet to store all your passwords. Then, you only need to really remember one — the one for the Excel file. There are also password-keeper applications available that achieve the same result.

TIP

If you decide to store your passwords in an Excel file, make a copy you can open on another computer in case your computer crashes or you forget the password to log on.

The bottom line on remembering passwords is simple: You are allowed no margin for error. A password that's "sort of like" the one you specified is not good enough. It must be *exactly* the one you specified. You must treat passwords as though they are valuable diamonds. Keep them safe and keep them secure, but don't keep them so safe that even *you* can't find them!

Okay, that's enough general advice about passwords. Next, you need to find out about types of user accounts.

TIP

As long as your account is an administrator account, or you have a separate administrator account that you can access, you can always reset someone's password on the computer if needed. You don't have to go through a password recovery process; just reset the password.

Picture Passwords

Windows 8 introduces a new way to log into your computer using picture passwords. Picture passwords are designed to be used with touchscreen PCs and tablets so you do not have to type in characters. Instead you choose a picture, draw a combination of three gestures on the picture that become your "password," and then save those combinations with that picture. You use those gestures to gain access to your computer, much like what happens when you type in a password on your keyboard.

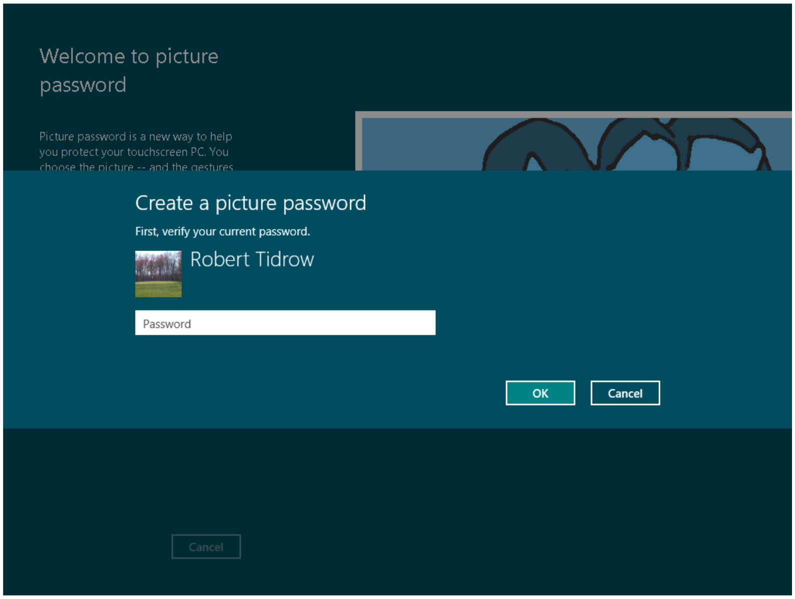
Creating a picture password

You set up a picture password through the Users area in PC Settings. Click Create A Picture Password to display the Create A Picture Password dialog. Figure 5.4 shows the Create A Picture Password dialog box. Type your user password and click OK to verify your password. You're now ready to select a picture and set up gestures to create the picture password.

Click Choose Picture and select a picture you want to use. Click Open to see the How's This Look? screen. Figure 5.5 shows an example of a picture that can be used for setting a picture password. You can now move the picture around until you see the view of the picture you want to use in your Picture Password. Once you establish that position, click Use This Picture.

FIGURE 5.4

Create a picture password.



Welcome to picture password

Picture password is a new way to help you protect your touchscreen PC. You choose the picture -- and the gestures

Create a picture password

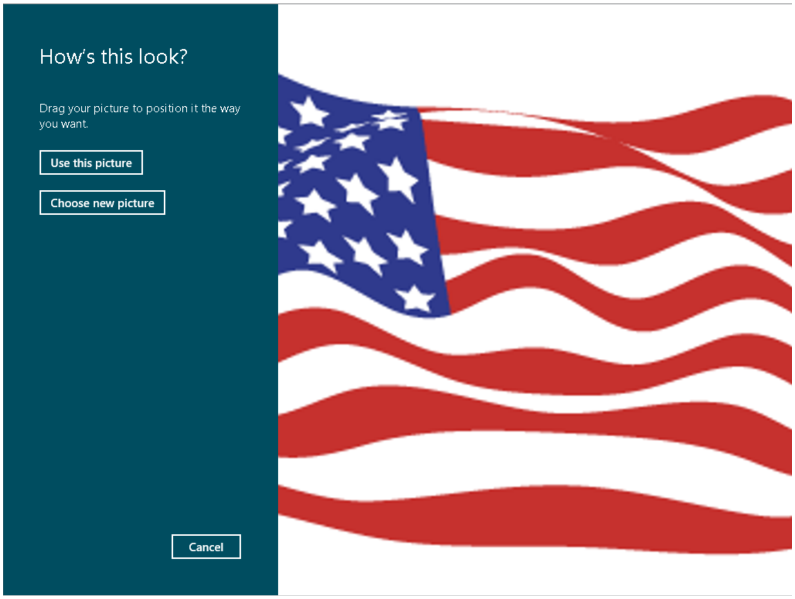
First, verify your current password.

Robert Tidrow

Password
OK
Cancel
Cancel

FIGURE 5.5

Use any picture, like the one shown here, for your picture password.



How's this look?

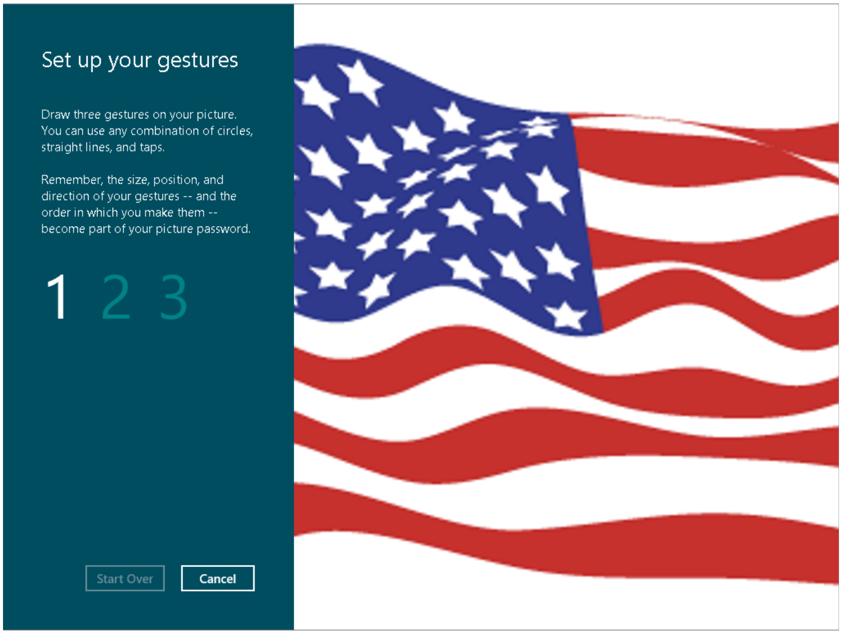
Drag your picture to position it the way you want.

Use this picture
Choose new picture
Cancel

It's time to draw the gestures to create the combination you want to use for the password. You can draw any combination of these three gestures: taps, circles, and straight lines. Figure 5.6 shows the screen for setting up your gestures. You'll want to remember the following when you set up the gestures:

FIGURE 5.6

Set a picture password using a combination of three gestures.



Set up your gestures

Draw three gestures on your picture. You can use any combination of circles, straight lines, and taps.

Remember, the size, position, and direction of your gestures -- and the order in which you make them -- become part of your picture password.

- Position of the gestures
- Size of the gestures
- Direction of the gestures
- Order in which you make the gestures

For example, on the flag picture, the following are suggested gestures:

- Draw a circle around three stars on the flag
- Tap the lowest white strip
- Draw a straight line from the top-right corner of the blue border down to the bottom of the lower red stripe

As you draw each gesture, Windows does two things. First, it shows each gesture using a white outline arrow (for straight lines), a white circle outline for circles, and a white dot for taps. Second, it shows the sequence of each gesture as 1, 2, or 3.

If you make a mistake, click Start Over and restart the gestures.

After you complete the gestures once, you must confirm them before they are saved. Simply repeat your three gestures. If you forget one, click Start Over and redraw the gestures, and be sure to remember your gestures this time.

When you successfully redraw the gestures in their correct order, click the Finish button. You will return to the Users screen of PC Settings.

Testing your picture password

Once you create a picture password, it's a good idea to test it soon to reinforce the gestures to memory. To do this, return to the Windows Start screen and sign out. Sign back into your account, this time using the gestures on the picture that displays. After you draw the correct gestures of your picture password, you are presented with the Windows Start screen.

Types of User Accounts

Windows 8 offers four basic types of user accounts: the built-in Administrator account, user accounts with administrative privileges, standard accounts, and a Guest account. They vary in how much privilege they grant to the person using the account.

With Windows 8, you also have the choice of setting up the user accounts as local or Microsoft accounts. You can read about these types of accounts in the following sections.

Microsoft accounts

With Microsoft accounts, you have the greatest flexibility for taking advantage of many of the newest Windows 8 features. To set up a Microsoft account, you must use a valid e-mail address. You can use an existing account, such as one you use at your office or a third-party account such as Yahoo! Mail or similar. If you do not have one, you can set up an e-mail account during the Windows 8 user account setup.

A Microsoft account provides the following features:

- Allows you to log in to a computer on which you have not previously set up a user account. (Conversely, with local accounts, you must set up a local account on each computer on which you want to log in.)
- Provides access to Microsoft Xbox Live and Windows Phone accounts.
- Enables you to download apps from the Windows Store.
- Syncs settings across multiple computers. For example, if you work on two or more computers, logging in with the same Microsoft account on each one will enable you to keep your favorites, history, sign-in info, and languages synced between the two computers.
- Enables you to access your files and photos from multiple computers.

Local accounts

Local accounts are used when you do not need to keep computers synced. When you use local accounts, you set up accounts for each user that will be using a computer. If you need to set up one account that can be used on multiple Windows 8 computers, you must set up Microsoft accounts.

Local accounts are also limiting in that you cannot use them to access the Windows Store to download apps. Again, to access Windows Store apps, you must set up and use a Microsoft account.

The built-in administrator account

A single user account named Administrator is built into Windows 8. This is not the same as an administrative account you create yourself or see on the login screen. This account is hidden from normal view. It doesn't show up on the usual login screen.

The built-in Administrator account has unlimited computer privileges. So while you're logged in to that account, you can do anything and everything you want with the computer. Any programs you run while you are in that account can also do anything they want. That makes the account risky from a security standpoint, and very unwise to use unless absolutely necessary.

In high-security settings, a new computer is usually configured by a certified network or security administrator who logs in to the Administrator account to set up the computer for other users. There, the administrator configures accounts on the *principle of least privilege*, where each account is given only as much privilege as necessary to perform a specific job.

When the administrator is finished, he or she typically renames the built-in Administrator account and password-protects it to keep everyone else out. The account is always hidden from view, except from other administrators who know how to find it. All this is standard operating procedure in secure computing environments, although hardly the norm in home computing.

In Windows 8, you really don't need to find, log in to, and use the built-in Administrator account unless you're an advanced user with a specific need, in which case you can get to it through Safe Mode. As a regular home user, you can do everything you need to do from a regular user account that has administrative privileges.

NOTE

Experienced users who need access to the built-in Administrator account can get to it through Safe Mode. we talk about that in Chapter 15. But if you're not a professional, we suggest you stay away from that and use an administrative account, discussed next.

Administrative user accounts

Most of the time when you hear reference to an Administrator account in Windows 8, that reference is to a regular user account that has administrative privileges. This is an account that has virtually all the power and privilege of the built-in Administrator account. But it also has a lot of security built in to help thwart security threats that might otherwise abuse that account's privileges and do harm to your computer.

Ideally, you want to create one user account with administrative privileges on your computer. If you intend to implement parental controls, you'll need to password-protect that account to keep children from disabling or changing parental controls.

Standard accounts

A standard user account is the kind of account everyone should use for day-to-day computer use. It has enough privilege to do day-to-day tasks such as run programs, work with documents, use e-mail, and browse the web. It doesn't have enough privilege to make changes to the system that would affect other people's user accounts. It doesn't have enough privilege to allow children to override parental controls. And most important, it doesn't have enough privilege to let malware such as viruses and worms make harmful changes to your system.

If you use a standard account all the time, and use a built-in administrative account only when absolutely necessary, you'll go a long way toward keeping your computer safe from Internet security threats.

Guest account

The optional Guest account exists to allow people who don't regularly use your computer to use it temporarily. Basically, it lets them check their e-mail, browse the web, and maybe play some games. It definitely won't let them make changes to your user account or anyone else's. Its limited privileges also help protect your system from any malicious software they might pick up while online.

Creating and Managing User Accounts

The best way to handle user accounts is for one person to play the role of administrator, even if that person isn't a professional. In a home environment, it would most likely be a parent who needs to define parental controls. It's best to log in to a user account that already has administrative privileges to get started. If you have only one user account, or are taken straight to the desktop at startup, then that account probably has administrative privileges.

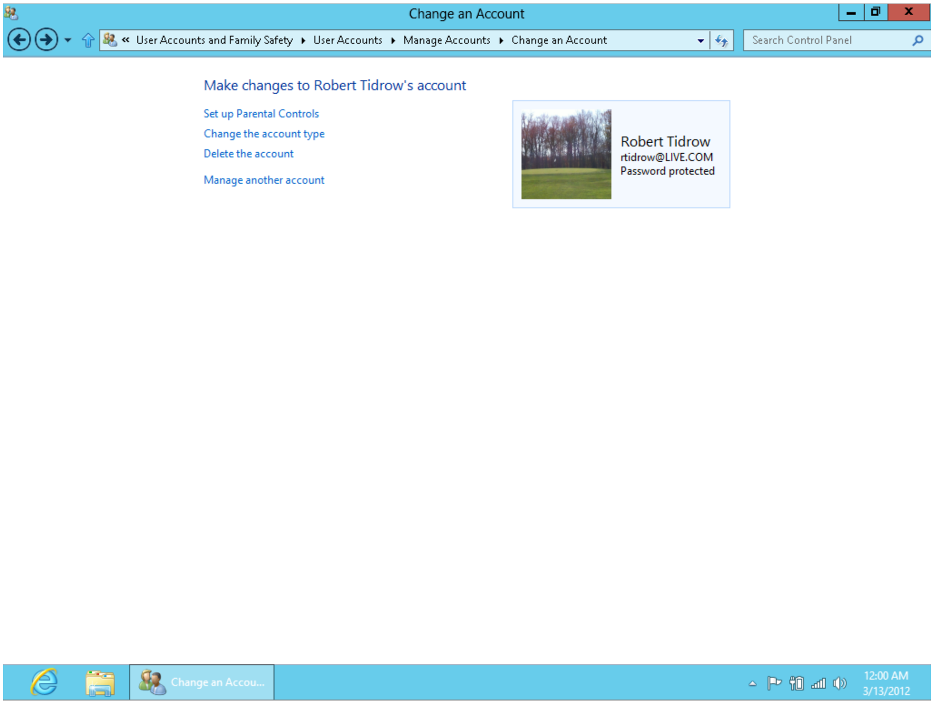
As with most configuration tasks, you create and manage user accounts through the Control Panel. There are several pages you can use, and several ways to get to them. As always, there is no right way or wrong way. No good way or bad way. You just use whatever is easiest and most convenient for you at the moment. Here are a couple of ways to navigate to options for managing the user account you're logged in to at the moment:

- Display the Charms Bar, click Search, click Settings, type **user** in the search box, and click Change User Account Control Settings.
- Display the Charms Bar, click Search, click Settings, type **user** in the search box, and click Make Changes To Accounts.

A Control Panel applet appears that lets you make changes to the account into which you're currently logged, as in the example shown in Figure 5.7. Options marked with shield icons require administrative privileges.

FIGURE 5.7

The User Accounts Control Panel applet



Change an Account
User Accounts and Family Safety ▸ User Accounts ▸ Manage Accounts ▸ Change an Account
Search Control Panel

Make changes to Robert Tidrow's account

Set up Parental Controls
Change the account type
Delete the account
Manage another account

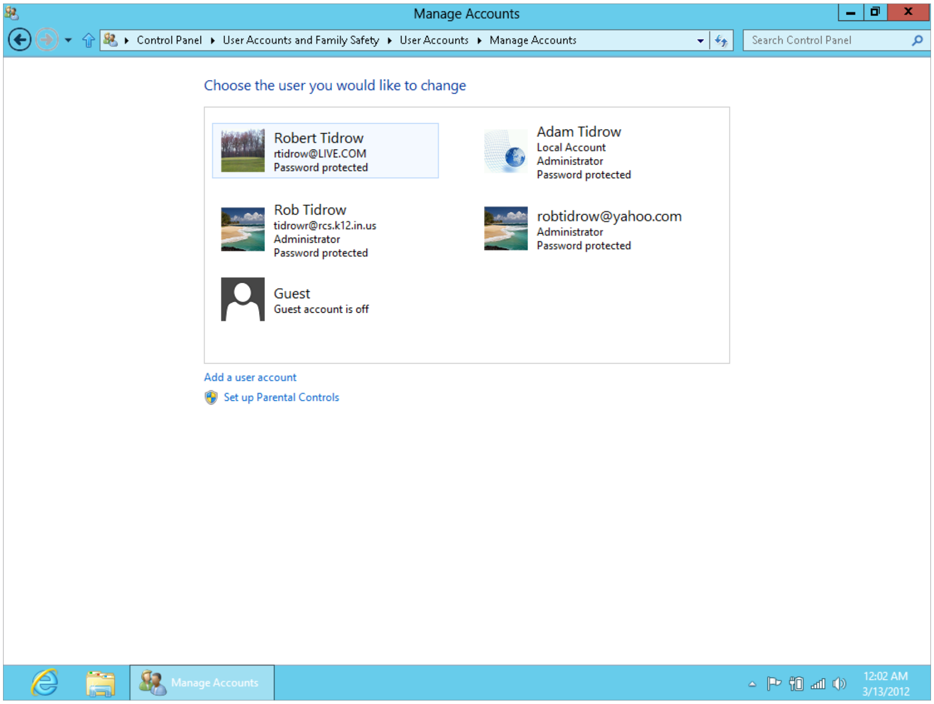
Robert Tidrow
rtidrow@LIVE.COM
Password protected

Change an Accou...
12:00 AM
3/13/2012

To create a new user account, click Manage Another Account. If you're in a standard account on a computer that already has a password-protected administrative account, you'll have to enter the password for the Administrator account. Or, if the administrative account doesn't have a password, press Enter to leave the password box empty. You end up in the Manage Accounts page. There, you see an icon for every user account on your system. You can also see each account's type. Figure 5.8 shows an example with three administrative accounts and one standard account (the Guest account icon also appears, but it is disabled on this computer).

FIGURE 5.8

Manage Accounts page



Manage Accounts
Control Panel ▸ User Accounts and Family Safety ▸ User Accounts ▸ Manage Accounts
Search Control Panel

Choose the user you would like to change

Robert Tidrow
rtidrow@LIVE.COM
Password protected

Adam Tidrow
Local Account
Administrator
Password protected

Rob Tidrow
tidrowr@rcs.k12.in.us
Administrator
Password protected

robtidrow@yahoo.com
Administrator
Password protected

Guest
Guest account is off

Add a user account
Set up Parental Controls
Manage Accounts
12:02 AM
3/13/2012

Creating a Microsoft user account

Creating a new Microsoft user account is easy. You should have one standard account for your day-to-day computing, plus one standard account for every other person who will use your computer. Microsoft accounts require passwords, so you must set up a password when you create a new Microsoft account.

Keep in mind that each user account has its own collection of files, Xbox Live settings, Windows Phone information, apps, and settings.

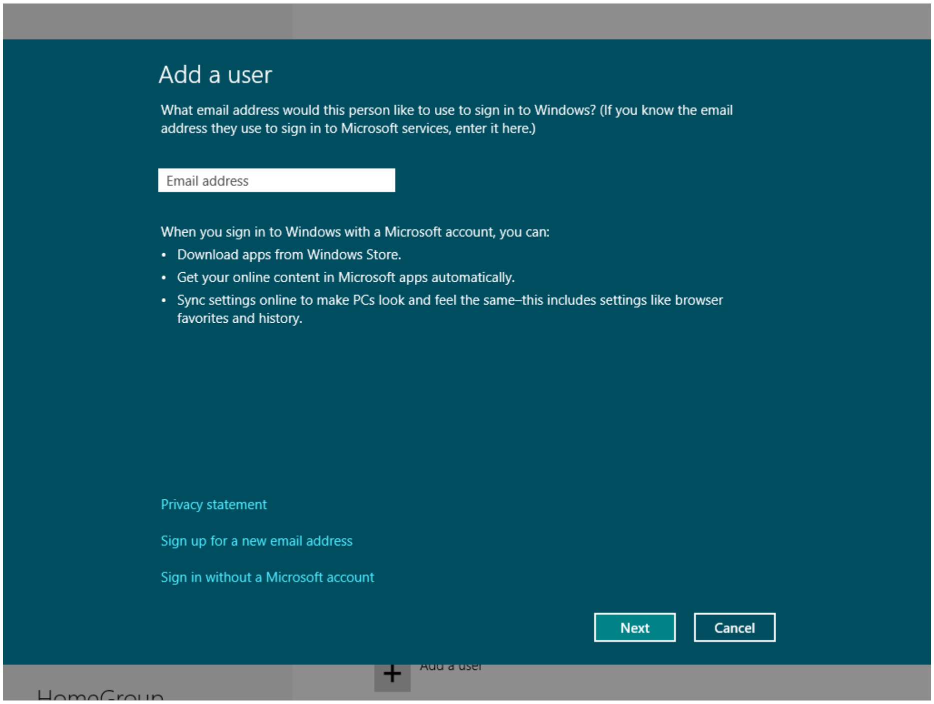
TIP

If you've been using your administrative account for a while, you may not want to create a new standard account from scratch. Better to create a new administrative account from scratch and then change your current account from an administrative account to a standard account. That way, you won't have to move files from your current account to the new account.

To create a new Microsoft user account, display the Charms Bar, click Settings, click Change PC Settings, and click Users. Click Add A User Account to get to the Add A User page shown in Figure 5.9.

FIGURE 5.9

Create a new Microsoft user account.



Add a user

What email address would this person like to use to sign in to Windows? (If you know the email address they use to sign in to Microsoft services, enter it here.)

Email address

When you sign in to Windows with a Microsoft account, you can:

- Download apps from Windows Store.
- Get your online content in Microsoft apps automatically.
- Sync settings online to make PCs look and feel the same–this includes settings like browser favorites and history.

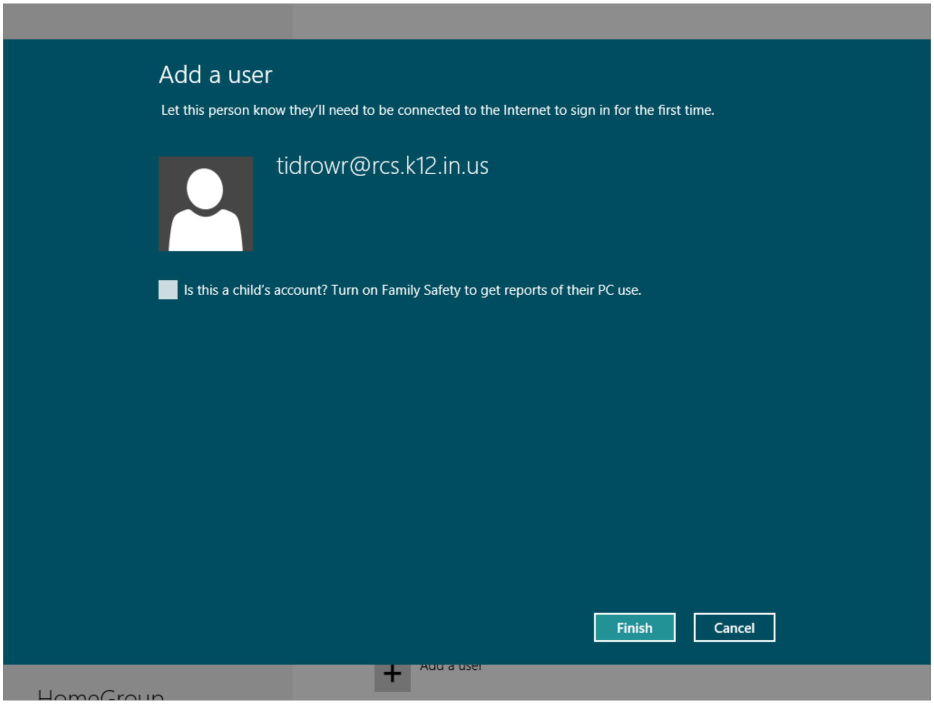
Privacy statement
Sign up for a new email address
Sign in without a Microsoft account
Next
Cancel

Type in an e-mail address for the user account. If you do not have an e-mail address, see the following section, "Creating a new e-mail address for a new user account."

After you type an e-mail address, click Next to see the Add A User window (as shown in Figure 5.10). Click Finish to complete the account creation process. You can repeat the process to create as many user accounts as you wish.

FIGURE 5.10

Fill out information about your new Microsoft account.



Add a user

Let this person know they'll need to be connected to the Internet to sign in for the first time.

tidrowr@rcs.k12.in.us

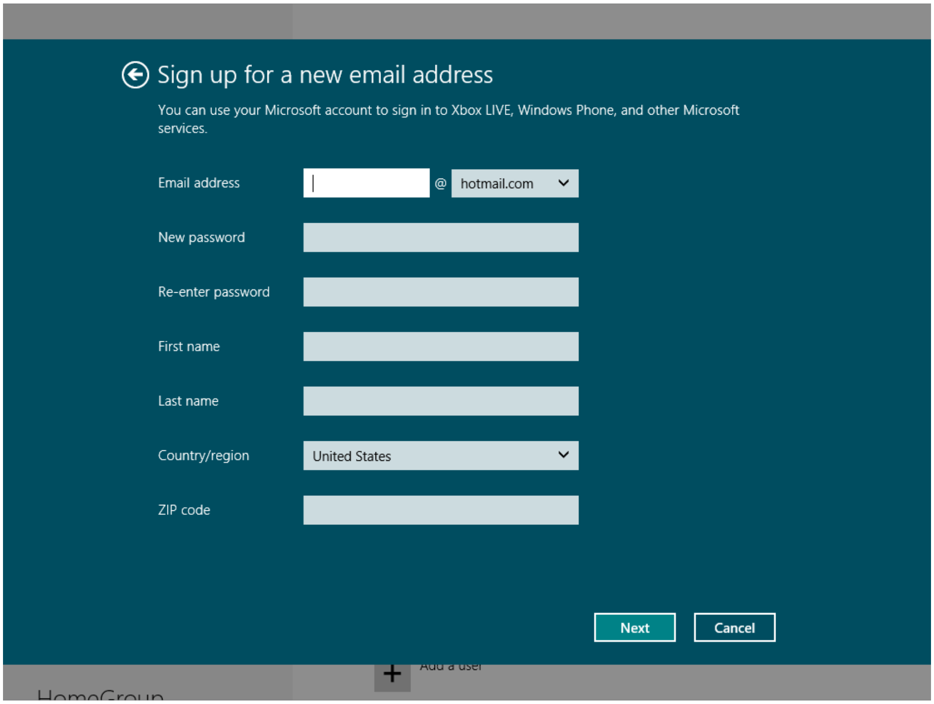
☐ Is this a child's account? Turn on Family Safety to get reports of their PC use.

Creating a new e-mail address for a new user account

If you do not have an e-mail address, you can set one up as you create a new Microsoft user account. To do this, click Add A User Account at the Manage Accounts page and then click the Sign Up For A New Email Address link on the Add A User page (see Figure 5.9 for this link). The Sign Up For A New Email Address page appears, as shown in Figure 5.11.

FIGURE 5.11

Fill out information to set up a new e-mail address for your Microsoft account.



Sign up for a new email address

You can use your Microsoft account to sign in to Xbox LIVE, Windows Phone, and other Microsoft services.

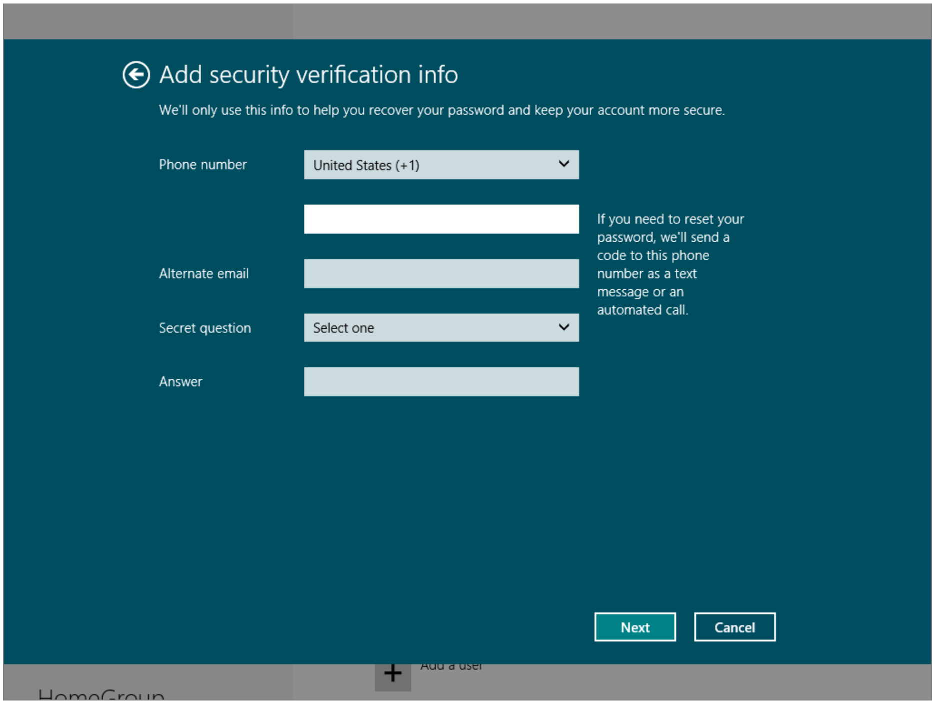
Email address: @ hotmail.com

Country/region: United States

Windows 8 enables you to set up a new Hotmail or Live.com e-mail address. Enter an e-mail address and then select Hotmail.com or Live.com from the drop-down list. Enter a new password (re-enter the password as well), your first and last names, your country, and your ZIP code. Click Next to show the Add Security Verification Info page, as shown in Figure 5.12. Here you can enter mobile phone information, an alternate e-mail address, and a secret question/response in case you need to recover your password. You must provide at least two of the three verification methods to continue.

FIGURE 5.12

Fill out security information when setting up a new e-mail address for your Microsoft account.



Add security verification info

We'll only use this info to help you recover your password and keep your account more secure.

Phone number: United States (+1)

If you need to reset your password, we'll send a code to this phone number as a text message or an automated call.

Alternate email

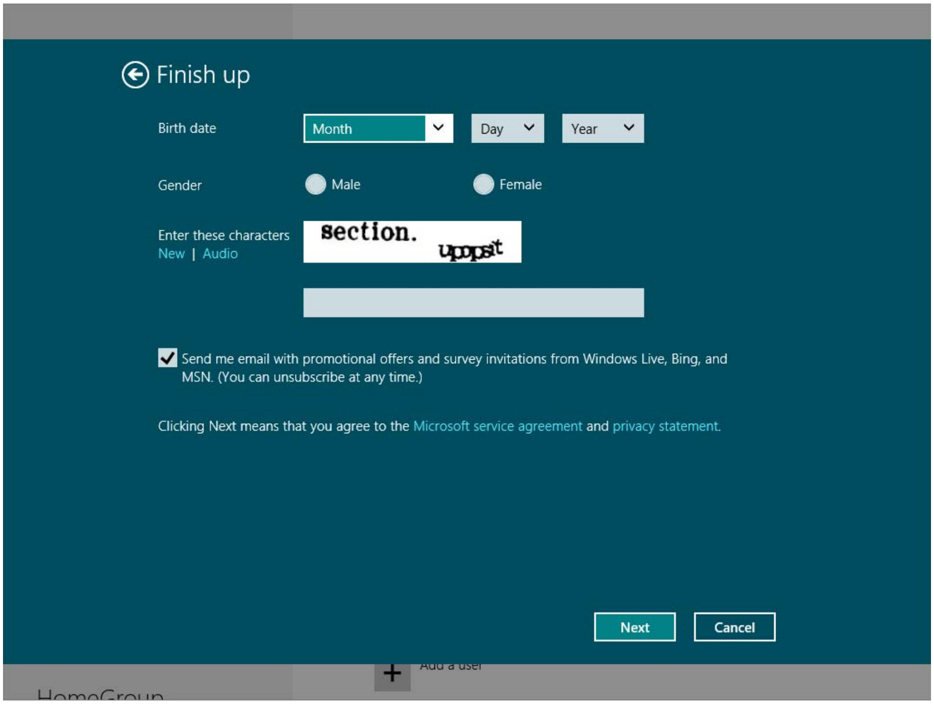
Secret question: Select one

Answer

Click Next to display the Finish Up page, as show in Figure 5.13. Enter your Birth date, Gender, and a list of characters and/or words to ensure that a human is filling out the Microsoft account page. Click Next and then click Finish to complete the new Microsoft account setup procedure. You're returned to the previous Manage Accounts page or the Users Settings page, where you see that the new user account has been added to the system.

FIGURE 5.13

Fill out the Finish Up page when setting up a new e-mail address for your Microsoft account.



Finish up

Birth date: Month, Day, Year

Gender: ○ Male ○ Female

Enter these characters
New | Audio

☑ Send me email with promotional offers and survey invitations from Windows Live, Bing, and MSN. (You can unsubscribe at any time.)

Clicking Next means that you agree to the Microsoft service agreement and privacy statement.

Creating a local account

If you do not want to set up a Microsoft account to sign in to Windows, you can set up a local account. To set up a local account, click Add A User Account on the Manage Accounts page and then click Sign In Without A Microsoft Account link at the bottom of the page. The Add A User page appears.

Click Local Account to display the Add A User page. Enter a username, type a new password, re-type the password, and enter a password hint, such as a word or phrase that will help jog your memory in case you forget your password later. With a local account, you are not required to enter a password, but we recommend that you do. Click Next to create the user and then click Finish to return to the Manage Account page.

Changing user accounts

When you create a user account, you're just giving it a name and choosing a type. After you've created a user account, you can change it to better suit your needs. Use the Manage Accounts page (refer to Figure 5.8) to make changes to accounts.

CAUTION

When you delete a user account, you might also delete all the files in that account if you're not careful. Read the section "Deleting User Accounts," later in this chapter before you delete an account so that you don't end up deleting photos or other documents that could be difficult or impossible to recover.

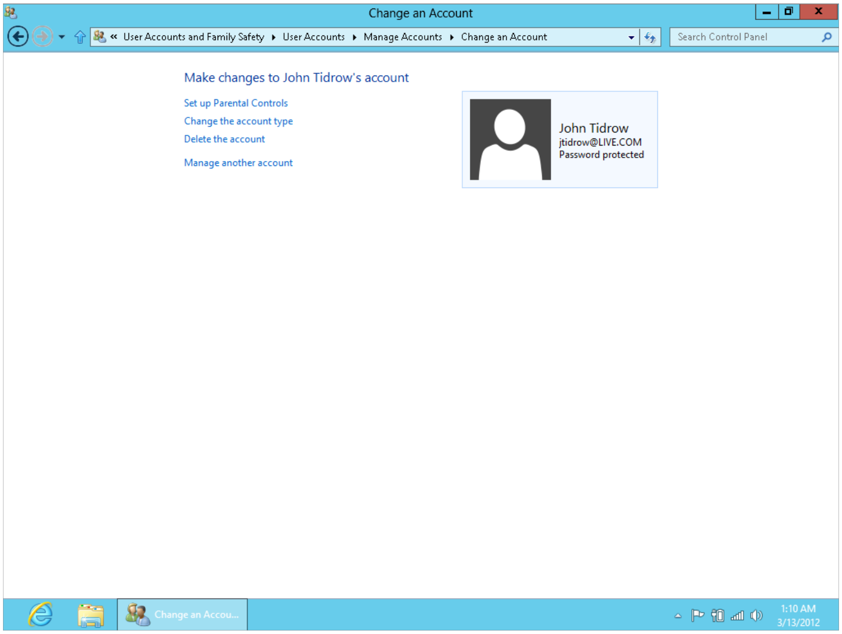
Changing a user account type

You can change an Administrator account to a standard account, or vice versa, from the main User Accounts page. For example, if you've been using an administrative account for your day-to-day computing since buying your computer, you might want to change it to a standard account for the added security that a standard account provides. At least one user account must have administrative privileges, so you can make this change only if you have at least one other user account on the system that has administrative privileges.

To change an account's type, click the account's icon or name in the Manage Accounts page. First, you're taken to the Change An Account page. As you can see in Figure 5.14, that page lets you change the account in a number of ways, or even delete the account.

FIGURE 5.14

Change An Account page


Change an Account
« User Accounts and Family Safety ▸ User Accounts ▸ Manage Accounts ▸ Change an Account
Search Control Panel
Make changes to John Tidrow's account
Set up Parental Controls
Change the account type
Delete the account
Manage another account
John Tidrow
jtidrow@LIVE.COM
Password protected
Change an Accou...
1:10 AM
3/13/2012

Click Change The Account Type to change the account from an administrative account to a standard account, or vice versa. To change the account type, click Change The Account

Type. You're taken to the Change Account Type page. Click the type of account you want this user account to be, and then click Change Account Type.

Password-protecting an account

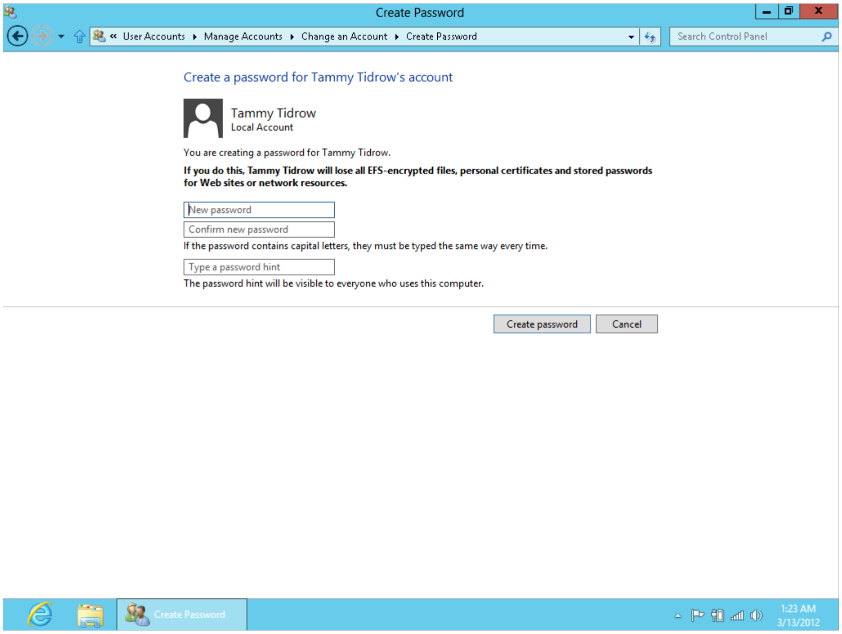
You have the option to set up local accounts without password protection (Microsoft accounts require passwords). If you share your computer with other people, chances are you'll want to keep some people out of the Administrator account. Likewise, you'll want to keep some users from having administrative privileges. This is especially important with parental controls. If the administrative account isn't password-protected, it won't take long for the kids to figure out how to bypass any controls you impose.

Password-protecting an account is easy enough. Just remember, you do *not* want to forget the password you set on the administrator account if it is the only one. otherwise, nobody will have administrative privileges, and that will cause a world of headaches. So think up a good password and password hint, and make sure you enter the password correctly while you're setting it.

To password-protect a user account, go to the main page for the user account. For instance, if you're in the Manage Accounts page, click the user account you want to password-protect. Then click Create A Password. You're taken to a page like the one in Figure 5.15. If you've been using the account for a while without a password, heed the warnings. If it's a brand-new account, you don't have anything to worry about.

FIGURE 5.15

Password-protecting an account


Create Password
« User Accounts ▸ Manage Accounts ▸ Change an Account ▸ Create Password
Search Control Panel
Create a password for Tammy Tidrow's account
Tammy Tidrow
Local Account
New password
Confirm new password
Type a password hint
Create password
Cancel
Create Password
1:23 AM
3/13/2012

You are creating a password for Tammy Tidrow.

If you do this, Tammy Tidrow will lose all EFS-encrypted files, personal certificates and stored passwords for Web sites or network resources.

If the password contains capital letters, they must be typed the same way every time.

The password hint will be visible to everyone who uses this computer.

To password-protect the account, type your password in the New Password text box. Then press Tab or click on the second text box and type the same password again. You won't see the characters you type, just a placeholder for each character.

TIP

Typing passwords always works that way to prevent shoulder surfing. Shoulder surfing is a simple technique for discovering someone's password just by watching over the person's shoulder as he or she types it on the screen.

Next, type in your password hint. The hint should be something that reminds you of the forgotten password, but not a dead giveaway to someone trying to break into the account. Click Create Password after you've filled in all the blanks.

If you see a message indicating that your passwords don't match, you'll have to retype both passwords. Make sure you type the password exactly the same in both boxes. Then click the Change Password button again. You'll be taken back to the main page for the user account when you've successfully entered the password in both boxes and provided a password hint.

You can repeat the process to password-protect as many accounts as you wish. If you're creating user accounts for people other than yourself, set a default password for the account and then let them manage their own passwords. In our opinion, every account should have a password.

TIP

Why have a password on all local accounts? First, it's basic security. Second, if you have more than one child using a shared computer, having a password for each child will help prevent one from using another's account to potentially bypass restrictions.

Changing the account picture

Every user account has an associated picture. The picture is like an icon, giving you a quick visual reference without having to read the name. The picture you choose can be any one of several built-in pictures or it can be a picture of your own choosing.

If you decide to use your own picture, try to avoid using one that comes straight from a digital camera. The file size on such pictures is really too large for a user account picture. Your best bet would be to crop out a section from a photo, and size it to about 100 × 100 pixels. The picture you choose must be a JPEG, BMP, PNG, GIF, or PNG file type.

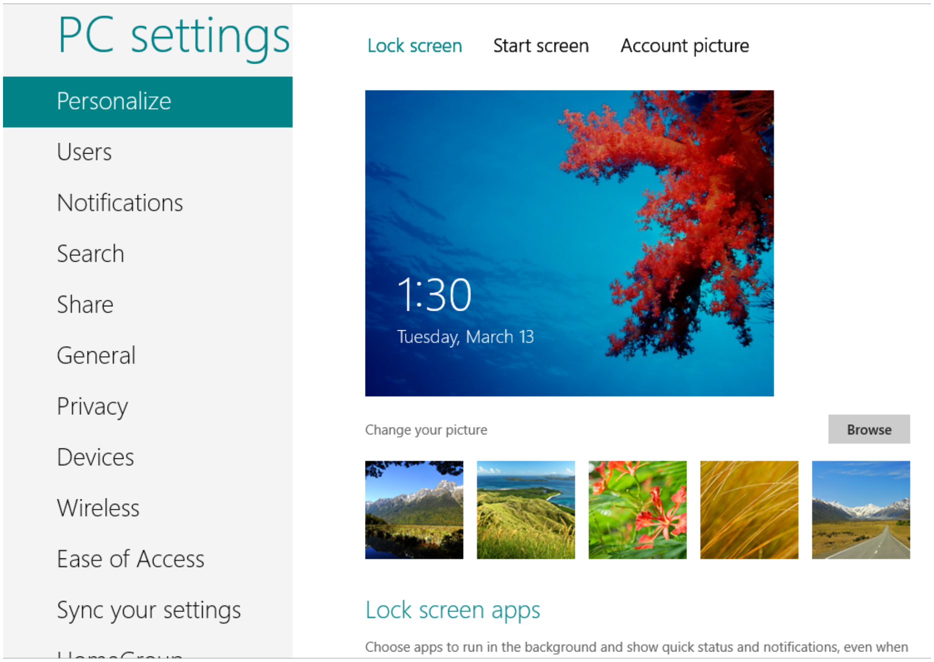
TIP

If you don't know enough about pictures to meet all the requirements, you can use built-in pictures. Then, after you've acquired some of the skills covered in Chapter 23, you can create a suitable user account picture and apply it to any user account.

To change the picture for a user account, use the new Windows 8 User Settings by displaying the Windows Charm and clicking Settings. Next, click Change PC Settings to display the PC Settings page, which is shown in Figure 5.16.

FIGURE 5.16

Changing a user account picture

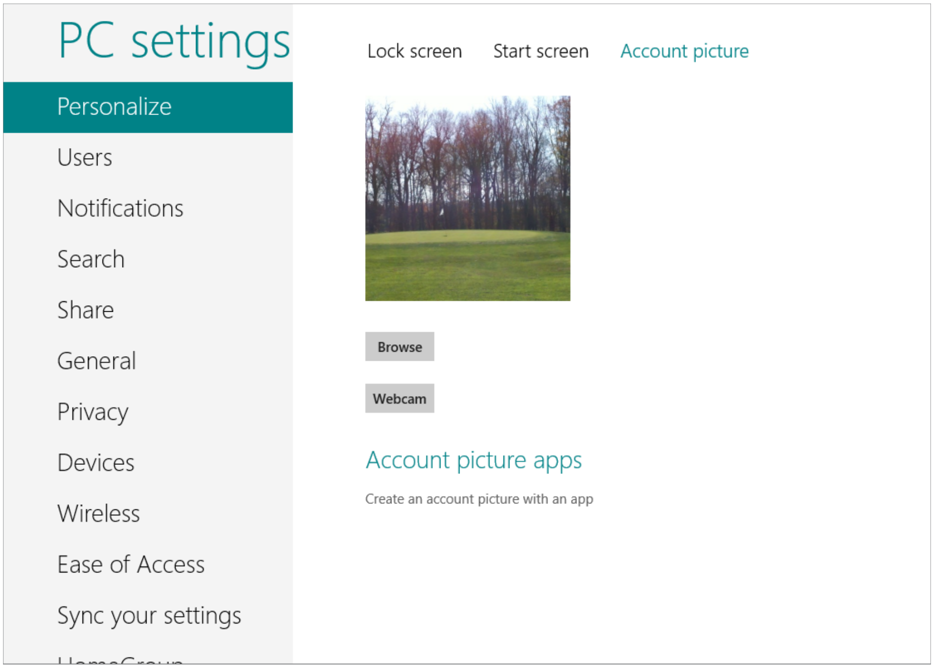

PC settings
Personalize
Users
Notifications
Search
Share
General
Privacy
Devices
Wireless
Ease of Access
Sync your settings
HomeGroup
Lock screen
Start screen
Account picture
1:30
Tuesday, March 13
Change your picture
Browse
Lock screen apps

Choose apps to run in the background and show quick status and notifications, even when

Click Personalize and then click the Account Picture link. Figure 5.17 shows the Account Picture link selected, with the current picture of the selected user showing. Click Browse and then click Files to select the area on your computer to locate a new picture. For example, click Files and then Pictures to display your Pictures folder. Click the picture you want to use and then click Choose Image.

FIGURE 5.17

You select Account Pictures from the Personalize screen.



PC settings
Personalize
Users
Notifications
Search
Share
General
Privacy
Devices
Wireless
Ease of Access
Sync your settings
HomeGroup
Lock screen
Start screen
Account picture
Browse
Webcam
Account picture apps
Create an account picture with an app

You also can use an attached webcam to snap a picture or a five-second video to use as an account picture. To do this, you must have a webcam connected to your computer. Next, click Webcam and do one of the following:

- To snap a still picture, click the screen. Use the cropping and resizing tools to select the portion of the picture to use. Click OK to save that picture as your new account picture.
- To take a five-second video, click Video Mode and click the screen to start the video. Click the screen again to stop the video and to review the video. Click Retake if you are not satisfied with the video. Click OK when you want to keep the video and to set it as your account picture.

The picture or video you selected replaces the original picture.

Enabling or disabling the guest account

The Guest account is for anybody who might need to use your computer on a temporary basis. For example, with a home computer, you might set up a Guest account for houseguests so that they can check their e-mail, browse the web, and such. The Guest account has very limited privileges, so you don't have to worry about guests messing things up while using your computer.

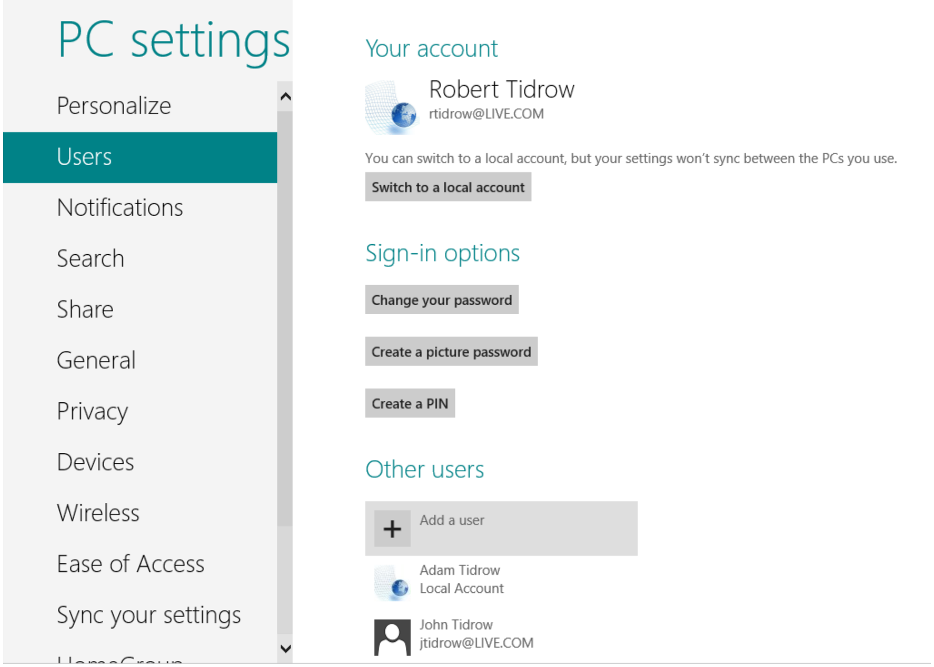
The Guest account is turned off by default. You can keep it that way until you actually need it. To activate the Guest account, go to the Manage Accounts Control Panel page and click the Guest account icon. Then choose Turn On. Likewise, should you ever need to disable the Guest account, click its icon on the Manage Accounts page and then click Turn Off the Guest account.

Navigating through user account pages

In Windows 8, user account management involves using two environments, including the Control Panel and PC Settings page. You can use the Control Panel to complete almost all user account tasks, even those that use the new PC Settings page. When you get to a task, it's largely just a matter of choosing options and reading text that's right on the screen. Windows provides links to advance to configuration screens. Some links are blue text (standard web hypertext color), while others use new Windows 8 buttons to display new settings or options for a task (as in Figure 5.18). You can use Back and Forward buttons to get around from page to page. You can click the Manage Another Account link on the User Accounts page.

FIGURE 5.18

The Add A User option is highlighted using the Windows 8 interface.


PC settings
Personalize
Users
Notifications
Search
Share
General
Privacy
Devices
Wireless
Ease of Access
Sync your settings
Your account
Switch to a local account
Sign-in options
Change your password
Create a picture password
Create a PIN
Other users
Add a user

Robert Tidrow
rtidrow@LIVE.COM

You can switch to a local account, but your settings won't sync between the PCs you use.

Adam Tidrow
Local Account

John Tidrow
jtidrow@LIVE.COM

Cracking into standard user accounts

If a local standard user forgets his or her password, you can use an account that has administrative privileges to reset the standard user's password. If you're an administrator and just want to see what a standard user is up to, you can use this same technique to change the password and get full access to its folders.

CAUTION

This approach will cause the standard user to lose access to encrypted files and e-mail messages created in an e-mail program such as Windows Live Mail.

To change the password for a local standard user account:

1. Log in to a user account that has administrative privileges.
2. Go to the Manage Accounts page (press Windows Key+X and choose Control Panel, click User Accounts, and click Manage Another Account).
3. Click the password-protected account for which the user has forgotten the password.
4. Click the Change The Password link.
5. Enter a new password and then enter it again to confirm it.
6. Type a password hint.
7. Click Change Password to save the new password.

The local standard user account will now have a new password. Be sure to share this password with the user so he or she can sign into Windows.

Deleting User Accounts

An administrator can easily delete user accounts. If nobody has ever used a user account, then deleting the account is no big deal. But if someone has used the account, the decision to delete it is more complicated. When you you delete a user account, you also delete all e-mail messages downloaded to the computer, Internet favorites, music, pictures, and videos. You could also delete all of that user's saved files if you're not careful. Doing this by accident would be a disaster because there's no way to undo the deletion.

CAUTION

Deleting a user account can have very serious consequences. Don't do it unless you fully understand the ramifications.

If you want to save the user's e-mail messages and Internet favorites, export them to that user's Documents folder first. Read the Windows online help for more information on exporting Internet Explorer favorites. Also, refer to your e-mail program's help for information on saving e-mail messages to a local drive, such as to your Documents folder.

So let's assume you understand the consequences and have no intention of deleting an account just for the heck of it. Only administrators can delete user accounts. So if you're in a standard account, you at least need to know the administrative password to delete a user account. You also need to log in to any account except the one you intend to delete. Then:

1. Display the Control Panel, click User Accounts, and click Manage Another Account.
2. Click the account you want to delete.
3. Click Delete The Account and read the resulting message. Then click one of the following buttons:
   - **Delete Files:** Click this button only if you intend to delete *everything* associated with the account, including all files that the user has created and saved.
   - **Keep Files:** Click this option to save the user's files. You will still lose the user's saved e-mail messages, Internet favorites, and user account.
4. Read the next page to make sure you understand the consequences of your choice. Then click Cancel if you change your mind, or click Delete Account if you're sure you know what you're doing.

If you choose Delete Account, the user's account will no longer exist. If you choose Keep Files, the user's saved files (those from his account's profile) will be in a folder on the desktop. That folder will have the same name as the user account you just deleted. Otherwise, nothing of the user's account, not even his or her saved files, will remain. (If you choose Cancel in Step 4, the entire account remains intact and unchanged.)

If you create a new user account with the same name as the one you just deleted, the new account is still an entirely new account. It will not inherit any files or settings from the account you previously deleted.

NOTE

If the user's Documents folder contains no documents, Windows will not create a copy of the folder on your desktop when you delete the account (because there is nothing to save).

Using User Accounts

As mentioned at the start of this chapter, each user account is like its own separate PC. Every user has his or her private Documents, Pictures, Music, and Video folders for storing files. Each user account can have its own Windows apps, e-mail account, and Internet favorites. Each user can customize the desktop, Start menu, and other settings to that user's own liking.

When you first start your computer, the Windows lock screen appears. Press Enter, swipe up (on a tablet or touch screen), or roll the mouse wheel up to display the sign in screen. You also see the sign on screen when you sign out of your user account. If you click a user account that isn't password-protected, you're taken straight into the account. But if you click the picture for a password-protected account, a password prompt appears.

To get into the account, you need to enter the appropriate password. Entering the wrong password displays a message stating the user account name or password is incorrect. You can click OK to try again. You can't get into the user account until you've entered the correct password for the account.

The first time you (or someone else) log in to a new user account, it's just like starting Windows 8 on a brand-new PC. The desktop has the default appearance. All of the document folders in the account are empty. There is no e-mail account, no Internet favorites, and no Windows apps installed. To use e-mail, the user (or administrator) needs to set up the account with an e-mail account, preferably an account used only by that user.

The user does have access to all the programs installed on the computer (except for rare cases in which someone installed a program for personal use only). The user will likely have Internet connectivity through the same network or Wi-Fi as all other user accounts.

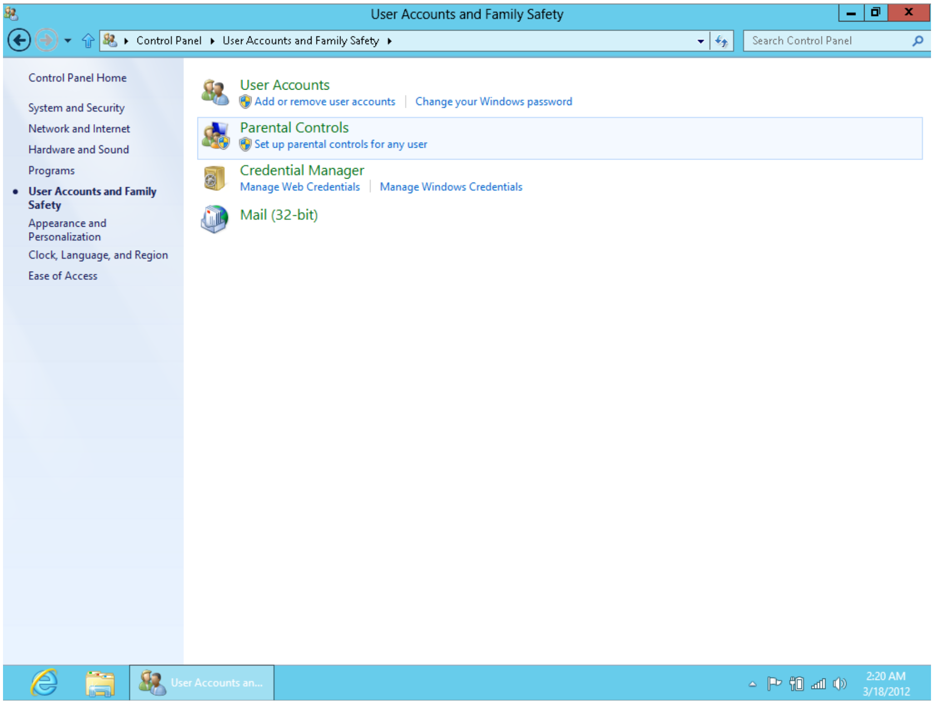
If the user account is a standard account, there are some limitations to what the user can do. For one, Windows settings are not synced with other devices, such as a Windows Phone or tablet. Also, the user cannot make any changes to the system that would affect other users. That's where Windows 8's User Account Control (UAC) security comes into play.

Understanding User Account Control

User Account Control (UAC) is the general term for the way administrative and standard user accounts work in Windows 8. As you browse around through various pages in the Control Panel, you'll notice that many links have a shield icon next to them. For example, if you display the Control Panel and click User Accounts And Family Safety, you see the options shown in Figure 5.19.

FIGURE 5.19

User Accounts And Family Safety


User Accounts and Family Safety
Control Panel ▸ User Accounts and Family Safety ▸
Search Control Panel
Control Panel Home
System and Security
Network and Internet
Hardware and Sound
Programs
User Accounts and Family Safety
Appearance and Personalization
Clock, Language, and Region
Ease of Access
User Accounts
Add or remove user accounts
Change your Windows password
Parental Controls
Set up parental controls for any user
Credential Manager
Manage Web Credentials
Manage Windows Credentials
Mail (32-bit)
User Accounts an...
2:20 AM
3/18/2012

Items that have a shield icon next to them require administrative approval. Items without a shield icon don't. For example, any user can change his or her Windows password, with or without administrative approval.

Options that do have a shield icon next to them require administrative approval. But you don't necessarily need to be logged in to an administrative account to use those options. You just have to prove that you have administrative privileges. You do that by entering the password for an administrative account. When you click a shielded option, a dialog box appears. To prove you have administrative privileges on this computer, enter the password for the administrative user account and click Submit (or OK in some dialog boxes).

Of course, when someone who doesn't know the administrative account password encounters the User Account Control dialog box, he or she is stuck. Users who don't know the password can't go any further. This prevents the standard user from doing things that might affect the overall system and other people's user accounts. It also prevents children from overriding parental controls. (You learn how to set up parental controls in Chapter 6.)

Privilege escalation in administrative accounts

If you happen to be logged in to an administrative account when you click a shielded option, you don't need to enter an administrative password. After all, if you're in an administrative account, you must already know the password required to get into that account. You don't need to prove that you know that password again. But, by default, you'll still see a prompt telling you that the program you're about to run makes changes to the system. You have to click Continue to proceed.

It might seem odd (and irritating) that you still have to click something to get to the item you clicked. But it works that way for a reason. The dialog box lets you know that the program you're about to run is going to make changes to the overall system. You expect to see that dialog box after you click a shielded option. And with time and experience, you'll learn to expect it when you do other things that affect the system as a whole, such as when you install new programs.

Sometimes it occurs when you don't expect to see it. For example, when opening an e-mail attachment, you wouldn't normally expect to see that message. After all, opening an e-mail attachment should just show you the contents of the attachment, not make a change to the system as a whole. Seeing the warning in that context lets you know that something fishy is going on, most likely something bad in the e-mail attachment. You can click Cancel to *not* open the attachment, thereby protecting your system from whatever virus or other bad thing lies hidden within the e-mail attachment.

See Chapter 10 for the full story on protecting your system from viruses and other malicious software.

On a more technical note, UAC operates on a principle of least privilege. When you're in an administrative account, you actually run with the same privileges as a standard user. This is done to protect your system from malware that would otherwise exploit the privileges of your administrative account to make malicious changes to your system.

When you enter a password or click Continue in response to a UAC prompt, you temporarily elevate your privileges to allow that one change to be made. After that change is made, you're back to your more secure standard user privileges. This is how things have been done in high-security settings for years, and it is considered a security best practice.

Turning UAC on and off

If at all possible, you should follow standard best practices and keep UAC active on your own computer. But if it proves to be impractical, you can turn off UAC.

Even though it is much improved from Windows Vista and Windows 7, User Account Control (UAC) is not always a very popular Windows 8 feature. After all, nobody wants a feature that makes them do more work, even when the extra work is nothing more than an occasional extra mouse click. Furthermore, sometimes UAC is just impractical. For example, if you give your kids standard user accounts, they can't install their own programs. But if you give them administrative accounts, you can't institute parental controls.

Before you turn off UAC, we recommend that you first ensure that all of the other security measures discussed in Part 2 of this book are installed and working on your PC. UAC is just one component of an overall security strategy. The more components you have on and working, the better.

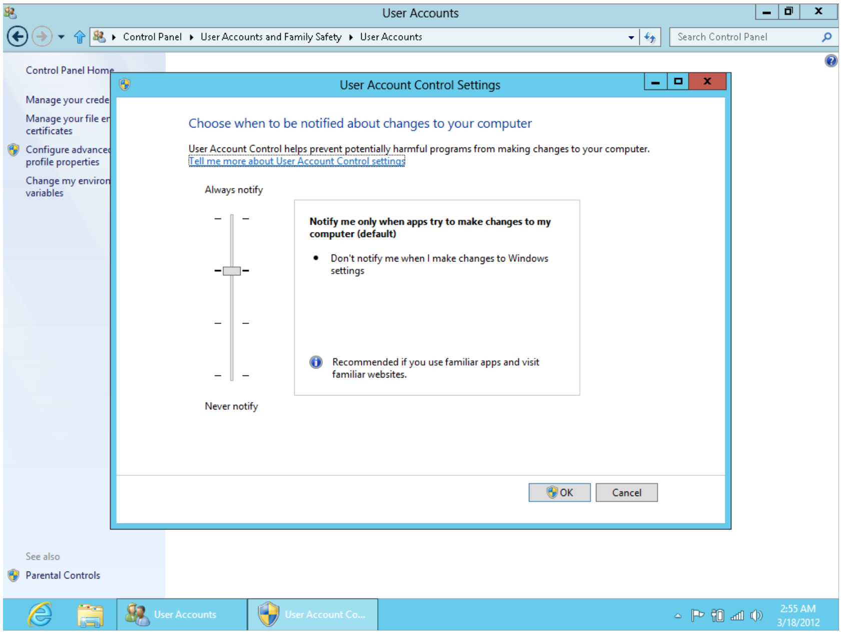
NEW FEATURE

User Account Control in Windows 8 follows similar functionality that was used in Windows 7 to make it less obtrusive to the user. In contrast to how it functioned in Windows Vista, and even in ways it worked in Windows 7, in which UAC was an on or off feature, UAC in Windows 8 offers a range of settings to tailor the end user experience.

Changing UAC settings is a simple process. From the Windows 8 interface, display the Charms Bar and click Search. Click Control Panel, click User Accounts And Family Safety, and then click User Accounts. Or from the desktop, press Windows+W and click Control Panel. Click User Accounts And Family Safety and then click User Accounts. Click Change User Account Control Settings and then, if prompted to do so, enter an administrative password to get to the dialog box shown in Figure 5.20.

FIGURE 5.20

Change User Account Control settings.



Choose when to be notified about changes to your computer

User Account Control helps prevent potentially harmful programs from making changes to your computer.

Notify me only when apps try to make changes to my computer (default)

- Don't notify me when I make changes to Windows settings

Recommended if you use familiar apps and visit familiar websites.

User Accounts
Control Panel ▸ User Accounts and Family Safety ▸ User Accounts
Search Control Panel
Control Panel Home
Manage your crede
Manage your file er certificates
Configure advance profile properties
Change my environ variables
See also
Parental Controls
User Account Control Settings
Tell me more about User Account Control settings
Always notify
Never notify
OK
Cancel
User Accounts
User Account Co...
2:55 AM
3/18/2012

You can choose from the following options:

- **Always Notify:** Windows will notify you if programs try to install software or make changes to the computer, or if you make changes to Windows settings.
- **Notify Me Only When Apps Try To Make Changes To My Computer (Default):** Windows will not notify you when you make changes to your computer, but will notify you, by dimming the desktop and displaying a warning, if programs attempt to make changes.
- **Notify Me Only When Apps Try To Make Changes To My Computer (Do Not Dim My Desktop):** Windows will not notify you when you make changes to your computer, but will notify you when programs attempt to make changes. However, Windows will not dim the desktop, but instead just display a message.
- **Never Notify:** Windows will not notify you of changes (turns off UAC). The only safe time to use this option is when you need to install a program that doesn't work with UAC. Turn off UAC, install the program, and then turn on UAC again.

To turn User Account Control off, drag the slider down to Never Notify. Or, if it was already off and you want better security, drag the slider up to the desired level. Then click OK.

If you turned off UAC, when you click a shielded option, you will receive no prompting for credentials or status checking. Things will basically be as they were in Windows XP and other earlier versions of Windows.

You can still institute parental controls, provided that you have one password-protected administrative account and each child has a standard account. (This also assumes that the kids don't know the password to the administrative account.) When a child tries to change or deactivate parental controls, a message box will appear, informing him or her of insufficient privileges. To change parental controls, you need to log in to the password-protected administrative account.

Creating and Using Password Reset Disks

A password reset disk is an important part of any password-protected PC. It's the only method of password recovery that allows you to retain all data in an account in the event of a forgotten password. Advanced features such as EFS (Encrypting File System) encryption, personal certificates, and stored network passwords can be recovered only by using a password reset disk.

The trick is that you need to create the password reset disk *before* you forget the password. You can't do it after you've forgotten the password. Keep that disk in a safe place where you can find it when you need it, but where others can't find it to gain unauthorized access to the administrative account.

A USB flash drive or memory card works equally well. However, a memory card will work only if your computer has slots for inserting a memory card.

Choosing a memory device for the password reset

A *USB flash drive* (also called a *jump drive*) is a small device that plugs into a USB port on your computer and looks and acts like a disk drive. A *memory card* is a storage device commonly used to save pictures in digital devices, like cameras or smartphones. If your computer has slots for such cards, you can slide a card into the slot and treat the card just as you would a USB flash drive. See Chapter 28 for more information.

To see examples and get an idea of cost, check out some online retailers. Then search the site for *flash drive*, *jump drive*, or *memory card reader* to view available products. If you're looking at memory card readers, the kind that plug into a USB port will be the easiest to install. Many retail department stores that sell computer or office supplies also carry flash drives.

Creating the password reset disk

To create a password reset disk, log in to the password-protected administrative account you created. Connect a jump drive to a USB port, or put a spare memory card in a memory card slot. Launch the Password Reset Wizard by going to the Windows Start screen, pressing Windows+W, and typing **Password Reset** into the search field. Click the Create A Password Reset Disk item. Then follow these steps:

1. Read the first page of the wizard that opens and click Next.
2. Choose the drive letter that represents the jump drive or memory card; then click Next.
3. Type the password for the administrative account you're currently logged into and click Next.
4. When the progress indicator is finished, click Next and then Finish.

Keep the drive or card in a safe place. If you use a jump drive that you also use for other purposes, make sure you don't erase the `userkey.psw` file. That's the file needed for password recovery.

Using the password reset disk

If you ever need to use the password reset disk to get into the administrative account, first start the computer and click the administrative account for which you created the password reset disk. Take a best guess at the password and press Enter.

If the password is rejected, insert the USB flash drive or memory card you created as a password reset disk. Wait a few seconds for Windows to recognize and register the item. Then click Reset Password under the password hint on the login screen.

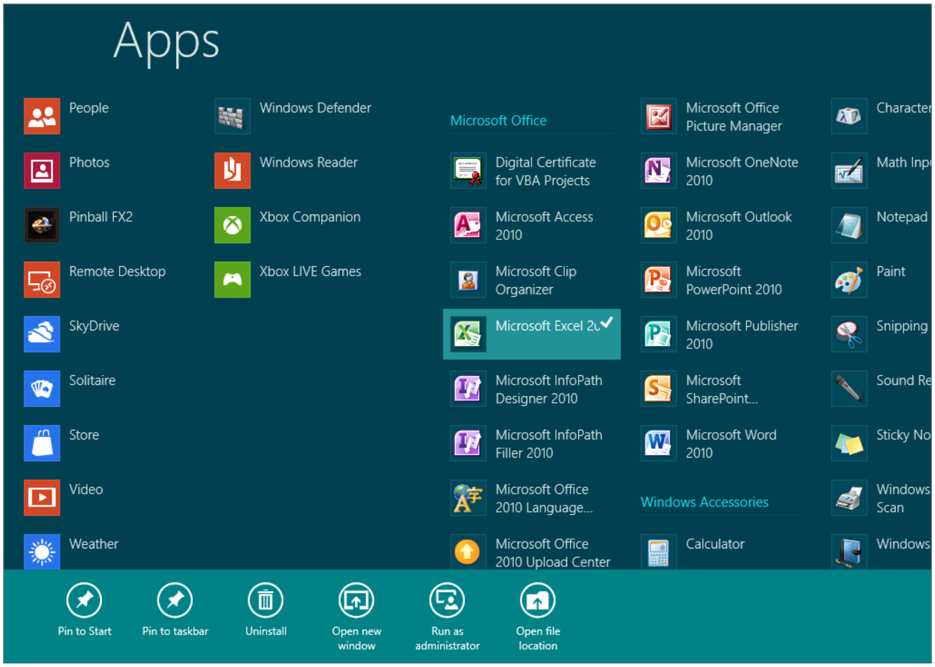
Follow the instructions presented by the wizard that opens. You won't be required to remember the original password. Instead, you create an entirely new password and hint for the account. Use that new password whenever you log in to the account from that point on.

Running Programs as Administrator

Most newer programs work with UAC's privilege escalation on-the-fly. But sometimes a program won't work, especially with older programs. You can run many programs with administrative privileges by right-clicking its startup icon and choosing Run As Administrator, as in the example shown in Figure 5.21.

FIGURE 5.21

Run a program as administrator.


Apps
People
Photos
Pinball FX2
Remote Desktop
SkyDrive
Solitaire
Store
Video
Weather
Windows Defender
Windows Reader
Xbox Companion
Xbox LIVE Games
Microsoft Office
Digital Certificate for VBA Projects
Microsoft Access 2010
Microsoft Clip Organizer
Microsoft Excel 2010
Microsoft InfoPath Designer 2010
Microsoft InfoPath Filler 2010
Microsoft Office 2010 Language...
Microsoft Office 2010 Upload Center
Microsoft Office Picture Manager
Microsoft OneNote 2010
Microsoft Outlook 2010
Microsoft PowerPoint 2010
Microsoft Publisher 2010
Microsoft SharePoint...
Microsoft Word 2010
Windows Accessories
Calculator
Character
Math Inp
Notepad
Paint
Snipping
Sound Re
Sticky No
Windows Scan
Windows
Pin to Start
Pin to taskbar
Uninstall
Open new window
Run as administrator
Open file location

If the option to run the program as an administrator is not available, then one of the following is true:

- The program doesn't require administrative privileges to run.
- You are already logged into an administrative account.
- The program is always blocked from running with elevated privileges.

Add the Built-in Administrator Account to the Login Screen

The built-in Administrator account is intentionally hidden to discourage users who don't have sufficient knowledge to understand the risks involved in using such an account. Typically, the only way to get to it is by starting the computer in Safe Mode. If you're an advanced user and want to be able to get to that account from the sign on screen, you just have to enable the account. Here's how:

1. Log in to an account that has administrative privileges.
2. At the desktop, press Windows+X and click Computer Management.
3. In the left column of the Computer Management tool that opens, click Local Users and Groups.
4. In the center column, double-click the Users folder.
5. Right-click the Administrator account and choose Properties.
6. Clear the checkmark beside Account Is Disabled and click OK.
7. Close the Computer Management window.

When you log out of your current account, you'll see the Administrator account on the sign-on screen. It will also appear there each time you start the computer.

Stop Entering Password on Lockout

If you leave the computer for a few minutes without logging out, you're taken to a *Lock Screen* that shows your user account information. If your user account is password-protected, you need to enter your password to get back to the desktop. This prevents other people from using your account while you're away. But this makes sense only in a work environment. In a home environment, it may be overkill. You can reconfigure Windows 8 so that you don't have to reenter your password to get back to your desktop. Here are the steps:

1. At the desktop, press Windows+X and click Power Options.
2. In the left column, click Require A Password On Wakeup.

3. Click Change Settings That Are Currently Unavailable. Then elevate your privileges by clicking Continue or by entering the password for an administrative account.
4. Choose Don’t Require A Password.
5. Click Save Changes.

For more information on power options settings, see Chapter 47.

Advanced Security Tools

IT professionals and highly experienced users can also use Local Users And Groups and Local Security Policy consoles for more advanced security configuration. Detailed instructions on using these security configuration tools are beyond the scope of this book and not the kinds of things the average user wants to mess with. However, if you want to access the Local Users And Groups tools, at the desktop press Windows+X and click Computer Management. Then click Local Users and Groups in the left column.

To get to Local Security Policy, press Windows+X click Search, type **local**, and click Local Security Policy. To find the new settings related to UAC, expand Local Policies in the left column and then click Security Options. The new UAC settings are at the bottom of the list in the content pane.

Using Credential Manager

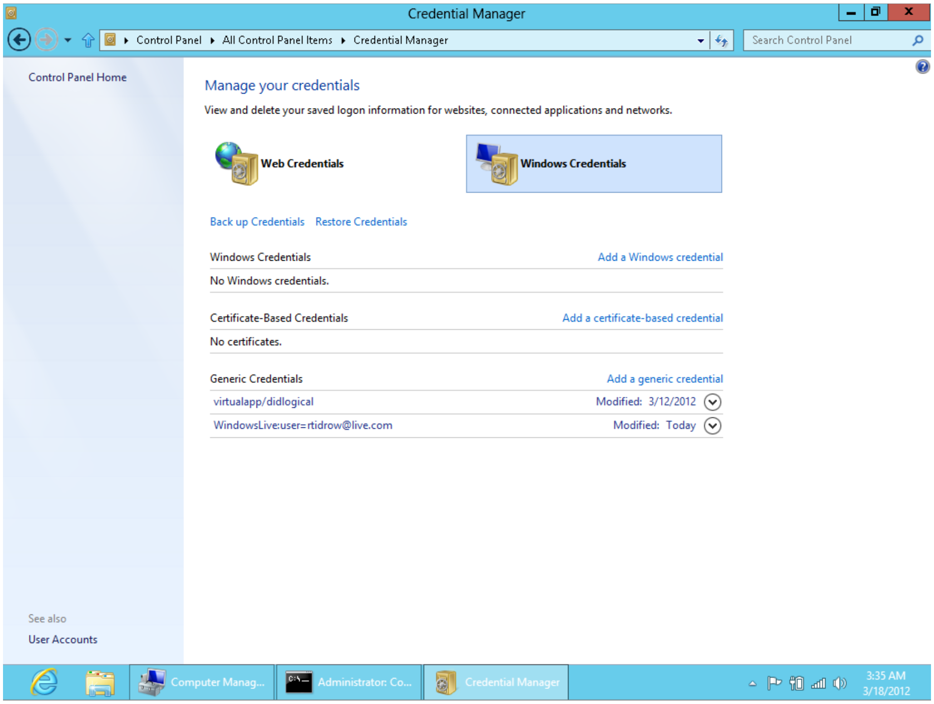
Credential Manager (see Figure 5.22) enables you to manage your usernames and their associated passwords (collectively called *credentials*) for servers, websites, and programs. These credentials are stored in an electronic virtual vault. When you access a server, site, or program that requests a password, Credential Manager can submit the credentials for you so that you don’t have to type them yourself. If your password cache has dozens of sets of credentials in it, as mine does, you’ll be more than happy to put Credential Manager to work for you.

NOTE

Credential Manager can’t interact with every website that requests credentials. For example, when you log in to your online banking site, the site probably displays a form in which you enter your credentials. Credential Manager can’t store this type of form-based credentials, but you can have Internet Explorer remember the credentials for you.

FIGURE 5.22

Store usernames and passwords in Credential Manager.



Credential Manager
Control Panel ▸ All Control Panel Items ▸ Credential Manager
Search Control Panel
Control Panel Home
See also
User Accounts
Web Credentials
Windows Credentials
Back up Credentials
Restore Credentials
Add a Windows credential
Add a certificate-based credential
Add a generic credential
Computer Manag...
Administrator: Co...
Credential Manager
3:35 AM
3/18/2012

Manage your credentials

View and delete your saved logon information for websites, connected applications and networks.

Windows Credentials

No Windows credentials.

Certificate-Based Credentials

No certificates.

Generic Credentials

virtualapp/didlogical Modified: 3/12/2012

WindowsLive:user=rtidrow@live.com Modified: Today

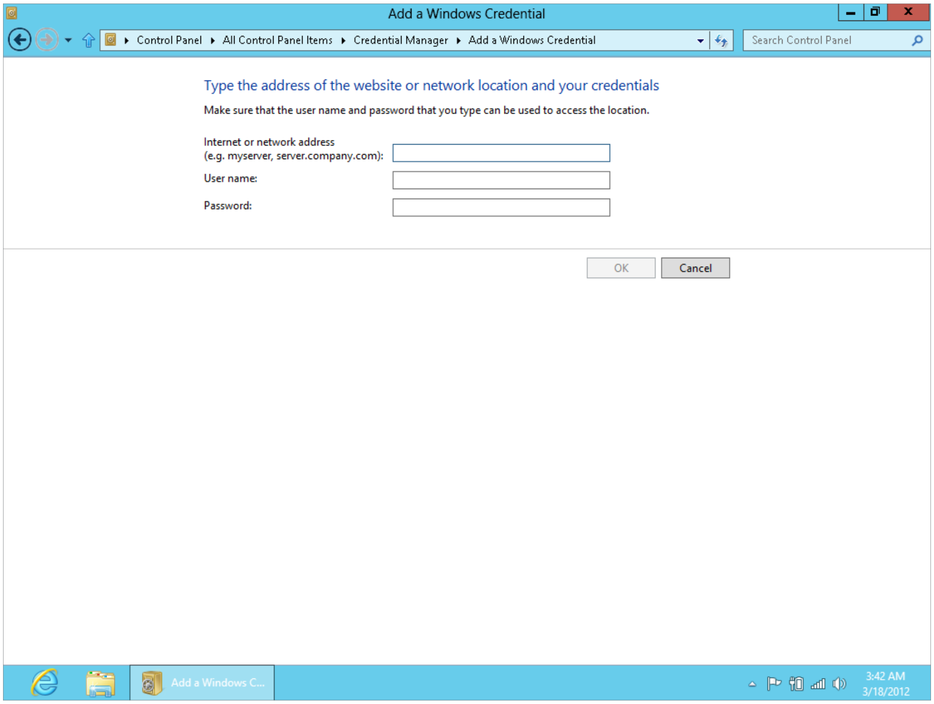
Although you can add credentials to your vault directly, you don't need to do so in most cases. Instead, you can let Windows do it for you. To do so, navigate to a server or other computer on your network, or to a web server that prompts you for credentials. Enter the username and password in the Windows Security dialog box, select Remember My Credentials, and click OK. Windows stores the credentials in Credential Manager.

You can add credentials to your vault directly if you want to. For example, if you have lots of credentials you use with multiple servers or sites, you might want to prepopulate your credential vault so that you don't have to wait to enter them until the next time you visit that resource.

To add credentials directly, open the User Accounts And Family Safety item in the Control Panel and then click Credential Manager. Click the Windows Credentials icon and then click Add A Windows Credential and in the resulting form (as shown in Figure 5.23), enter the following:

FIGURE 5.23

Manually add a Windows credential.



Add a Windows Credential
Control Panel ▸ All Control Panel Items ▸ Credential Manager ▸ Add a Windows Credential
Search Control Panel
OK
Cancel
Add a Windows C...
3:42 AM
3/18/2012

Type the address of the website or network location and your credentials

Make sure that the user name and password that you type can be used to access the location.

Internet or network address (e.g. myserver, server.company.com):

User name:

Password:

- **Internet or Network Address:** Type the path to the resource. For example, enter `\\fileserver\Docs` to specify the Docs share on a server on the network named fileserver. Or, you would enter `portal.mycompany.com` if your company intranet portal was located at `https://portal.mycompany.com`.
- **Username:** Enter the username you want to use to log on to the specified service.
- **Password:** Enter the password associated with the username.

You can also add a certificate resource, which associates a network resource with a security certificate that is already installed in the Personal certificate store on your computer. In this case, verify that you have already installed the certificate, click Add A Certificate-Based Credential, type the resource URL, and click Select Certificate to select the certificate.

The final type of credential you can add is a generic credential, which are credentials used by applications that perform authentication themselves rather than rely on Windows to perform the authentication. As with a Windows credential, you specify the URL, username, and password for a generic credential.

TIP

You can specify a port number in the resource path, if needed. For example, if an application is connecting to a SQL Server at `sql.mydomain.tld` on port 1433 (which is an uncommon port), you would specify `sql.mydomain.tld:1433` in the Internet or Network Address field in Credential Manager.

Managing Profile Properties and Environment Variables

From the earliest days of DOS, the PC operating system we old computer geeks used before Windows came along, *environment variables* have been used to store information used by the operating system. For example, the `TMP` and `TEMP` variables tell Windows where to store temporary files. The `PATH` variable tells Windows where to look for programs if it can't find them in the current directory. A number of other system and user variables serve similar purposes.

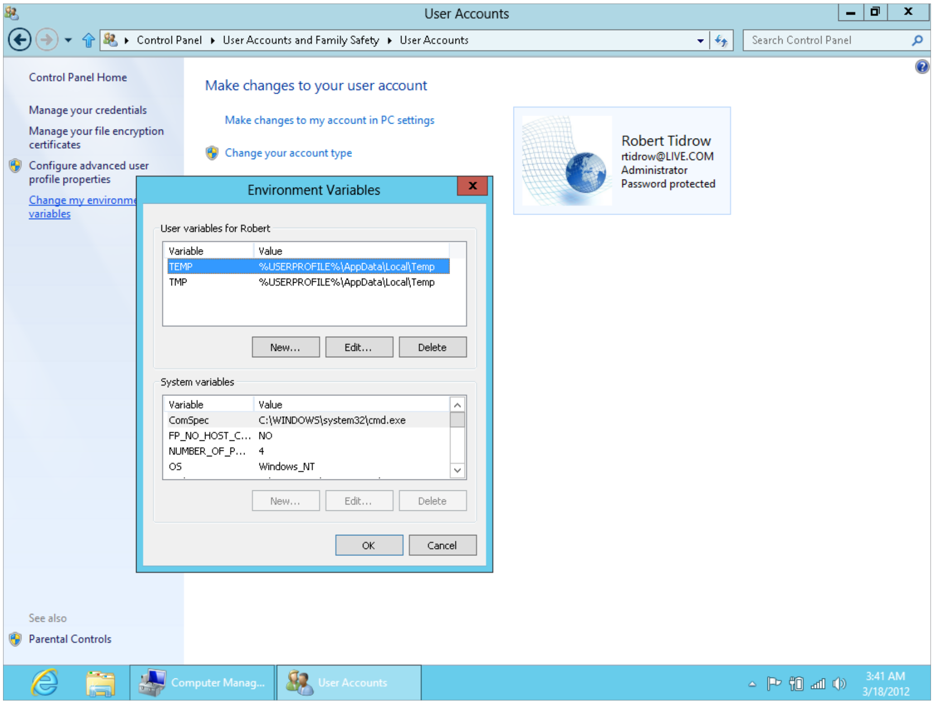
In most cases, you should not need to change environment variables. But if you do — such as when adding a folder to the `PATH` variable — you can do so through your user account properties. Open the User Accounts object in the Control Panel and click Change My Environment Variables. In the Environment Variables dialog box (see Figure 5.24), click the user variable that you want to change, click Edit, modify as needed, and click OK. You can also click New and then add a new user environment variable.

NOTE

Only the built-in Administrator account can modify the system environment variables.

FIGURE 5.24

The Environment Variables dialog box


User Accounts
Control Panel ▸ User Accounts and Family Safety ▸ User Accounts
Search Control Panel
Control Panel Home
Manage your credentials
Manage your file encryption certificates
Configure advanced user profile properties
Change my environme variables
See also
Parental Controls
Make changes to your user account
Make changes to my account in PC settings
Change your account type
Environment Variables
User variables for Robert
New...
Edit...
Delete
System variables
New...
Edit...
Delete
OK
Cancel
Computer Manag...
User Accounts
3:41 AM
3/18/2012

Robert Tidrow
rtidrow@LIVE.COM
Administrator
Password protected

User variables for Robert

Variable	Value
TEMP	%USERPROFILE%\AppData\Local\Temp
TMP	%USERPROFILE%\AppData\Local\Temp

System variables

Variable	Value
ComSpec	C:\WINDOWS\system32\cmd.exe
FP_NO_HOST_C...	NO
NUMBER_OF_P...	4
OS	Windows_NT

Wrap-Up

When two or more people share a computer, user accounts enable each person to treat the computer as though it was his or her own. Users can personalize settings to their liking and keep their files separate from other users. The new Windows 8 Microsoft Accounts provide an account structure that enables multiple devices (Windows computer, Windows Phone, Windows tablets, and so on) to sync settings, apps, and other personalized items.

User accounts also work in conjunction with parental controls. A parent can set up a password-protected administrative account and then use that account to set up parental controls. You can create standard accounts for children and allow them to log in to their own accounts only. Parental controls are covered in Chapter 6.

User accounts also add security to your system by making all users have limited privileges. The general term for security through user accounts is User Account Control (UAC). Some key points to keep in mind:

- At least one person should play the role of administrator for the computer. That person should create a password-protected user account with administrative privileges.
- The administrator should also create a standard account for him- or herself and one for each person who shares the computer.
- All users (including the administrator) should use their standard accounts for day-to-day computing.
- All accounts should have a strong password.
- All the tools for creating and managing user accounts are accessible from User Accounts And Family Safety in the Control Panel.

CHAPTER

6

Using Windows 8 Family Safety

IN THIS CHAPTER

Setting up Windows 8 Family Safety

Setting limits to computer usage, games, and apps

Controlling web browsing

Viewing activity reports

Keeping kids safe online isn't always easy for parents — especially for the parent who hasn't exactly been riding the crest of the tech wave in recent years. Parental safety controls are a great first step to keeping children safe online. You don't need to be a computer guru to set parental controls using the Microsoft Family Safety features of Windows 8.. After you've set up standard user accounts for the children (as discussed in Chapter 3), the rest is fairly easy. In this chapter, you see just how easy it is to set up controls using the Windows 8 Family Safety tool and how to view reports and options online.

Before You Get Started

To use the Family Safety features in Windows 8, your computer must be set up with at least one password-protected administrator user account. If you set up multiple user accounts with administrative privileges, make sure that they're all password-protected. And make sure the kids don't know the password. Otherwise, the kids can easily go in and change any parental controls you import.

Furthermore, each child should have his or her own standard user account. If you have no idea what we're talking about here, see Chapter 5. There you can learn everything you need to know about setting up user accounts.

Setting Up Windows 8 Family Safety

With Family Safety, Windows 8 provides four options for controlling how your children (or anyone) can use the computer. These are as follows:

- **Windows Web Filters:** Specify the type of content that your child is allowed to view.
- **Time Limits:** Specify the hours during each day that the child can use the computer.

- **Windows Store and Game Restrictions:** Specify whether the child can access the Windows 8 Store and if they can play games on the computer. You can also set the rating and content types that are allowed.
- **App Restrictions:** Select which apps and programs the child can run.

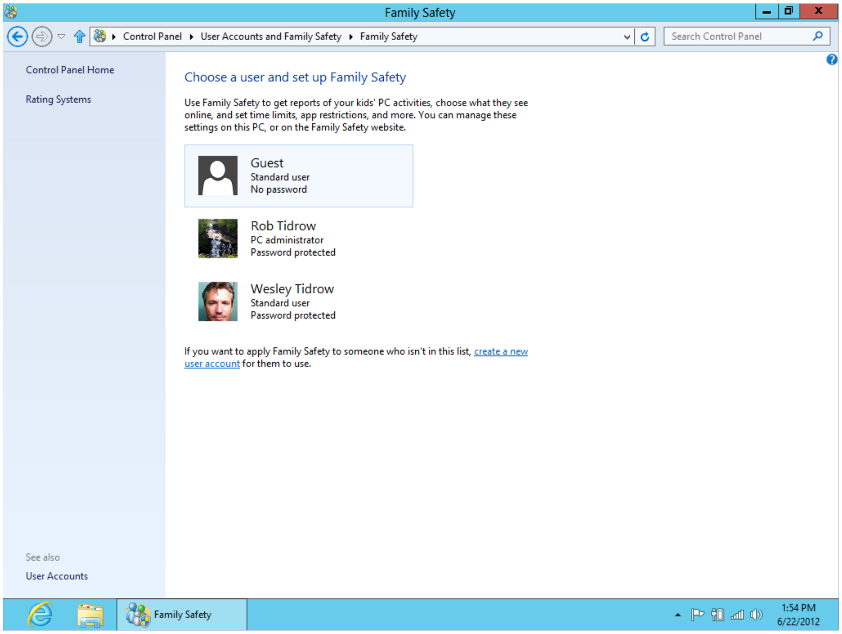
Getting to the Family Safety page

Fortunately, you don't need to be a computer guru to set up parental controls in Family Safety. After you've set up appropriate user accounts, the rest is easy. Here are the steps:

1. Log into Windows with a user account that has administrative privileges.
2. Do whichever of the following is most convenient for you at the moment:
   - At the Windows Start screen, press Windows+W. Type **fam** in the search box, click Settings, and click Family Safety.
   - At the Windows desktop, press Windows+X, and choose Control Panel, click User Accounts And Family Safety, and then click Family Safety.
3. A page appears that shows the name and picture for each user account you've created, as in the example in Figure 6.1. Click the user account for which you want to set up parental controls.

FIGURE 6.1

Click a standard user account to create parental controls.



Family Safety
Control Panel ▸ User Accounts and Family Safety ▸ Family Safety
Search Control Panel
Control Panel Home
Rating Systems
See also
User Accounts
Family Safety
1:54 PM
6/22/2012

Choose a user and set up Family Safety

Use Family Safety to get reports of your kids' PC activities, choose what they see online, and set time limits, app restrictions, and more. You can manage these settings on this PC, or on the Family Safety website.

Guest
Standard user
No password

Rob Tidrow
PC administrator
Password protected

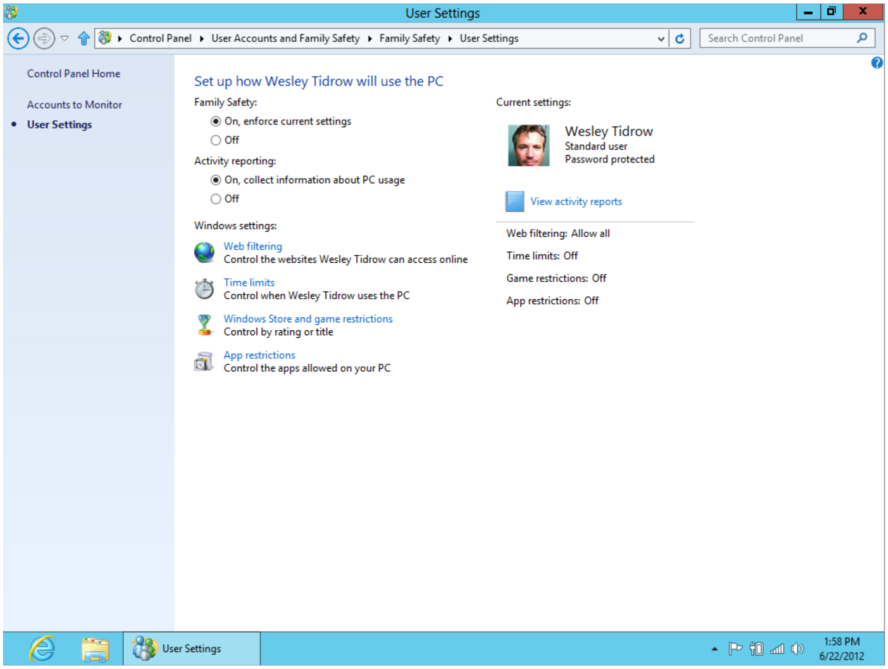
Wesley Tidrow
Standard user
Password protected

If you want to apply Family Safety to someone who isn't in this list, create a new user account for them to use.

Now you're in the parental controls page shown in Figure 6.2. Any options you choose are applied to the account shown in the page. For example, in Figure 6.2, we're setting up Family Safety options for a user named Wesley.

FIGURE 6.2

Setting up Family Safety options for a user


User Settings
Control Panel ▸ User Accounts and Family Safety ▸ Family Safety ▸ User Settings
Search Control Panel
Control Panel Home
Accounts to Monitor
User Settings

Set up how Wesley Tidrow will use the PC

Family Safety:
● On, enforce current settings
○ Off

Activity reporting:
● On, collect information about PC usage
○ Off

Windows settings:

Web filtering
Control the websites Wesley Tidrow can access online

Time limits
Control when Wesley Tidrow uses the PC

Windows Store and game restrictions
Control by rating or title

App restrictions
Control the apps allowed on your PC

Current settings:

Wesley Tidrow
Standard user
Password protected

View activity reports

Web filtering: Allow all
Time limits: Off
Game restrictions: Off
App restrictions: Off

User Settings
1:58 PM
6/22/2012

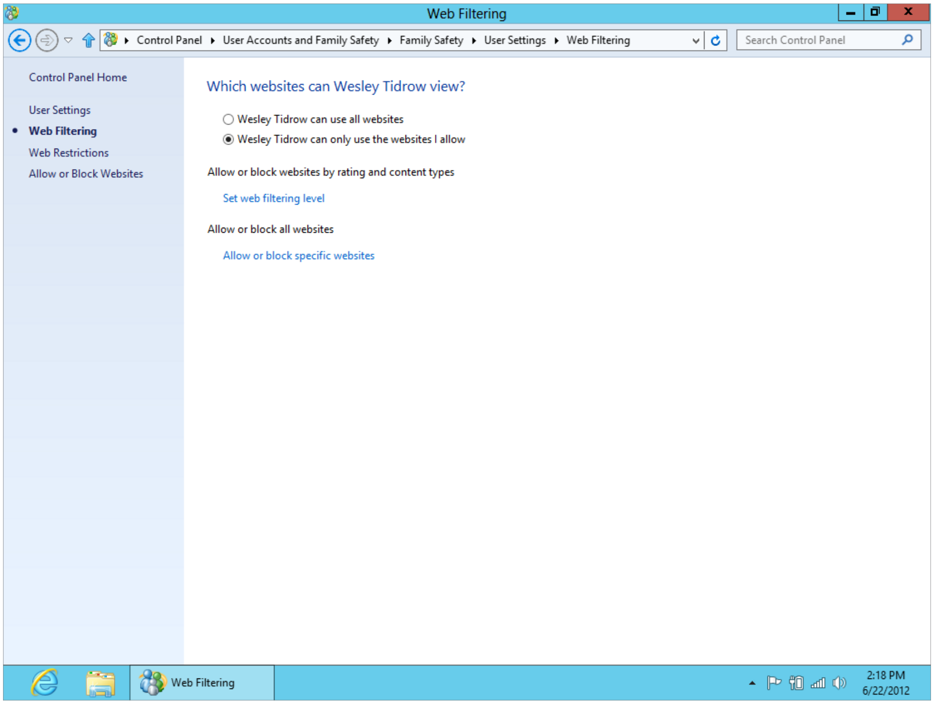
To activate Family Safety for the account, choose On, Enforce Current Settings under the Family Safety heading. After you turn on these parental controls, you can choose which controls to apply for the selected user.

Setting Web Filtering

To control which websites a child can view, click the Web Filtering link. You can allow or block access to specific websites, or specify that Windows should block web content automatically. Figure 6.3 shows the Web Filtering page. If you use the former feature, manually specify which sites can be visited (for example `www.disney.com`) and which are blocked (for example, sites that are suspected as being adult-related sites). If you use this feature, you can limit your child's web activity only to those sites you specify in the Allowed list. This provides you absolute control over the sites your child can view.

FIGURE 6.3

Use the Web Filtering page to set which websites a user can visit.


Web Filtering
Control Panel ▸ User Accounts and Family Safety ▸ Family Safety ▸ User Settings ▸ Web Filtering
Search Control Panel
Control Panel Home
User Settings
Web Filtering
Web Restrictions
Allow or Block Websites
Web Filtering
2:18 PM
6/22/2012

Which websites can Wesley Tidrow view?

○ Wesley Tidrow can use all websites
● Wesley Tidrow can only use the websites I allow

Allow or block websites by rating and content types

Set web filtering level

Allow or block all websites

Allow or block specific websites

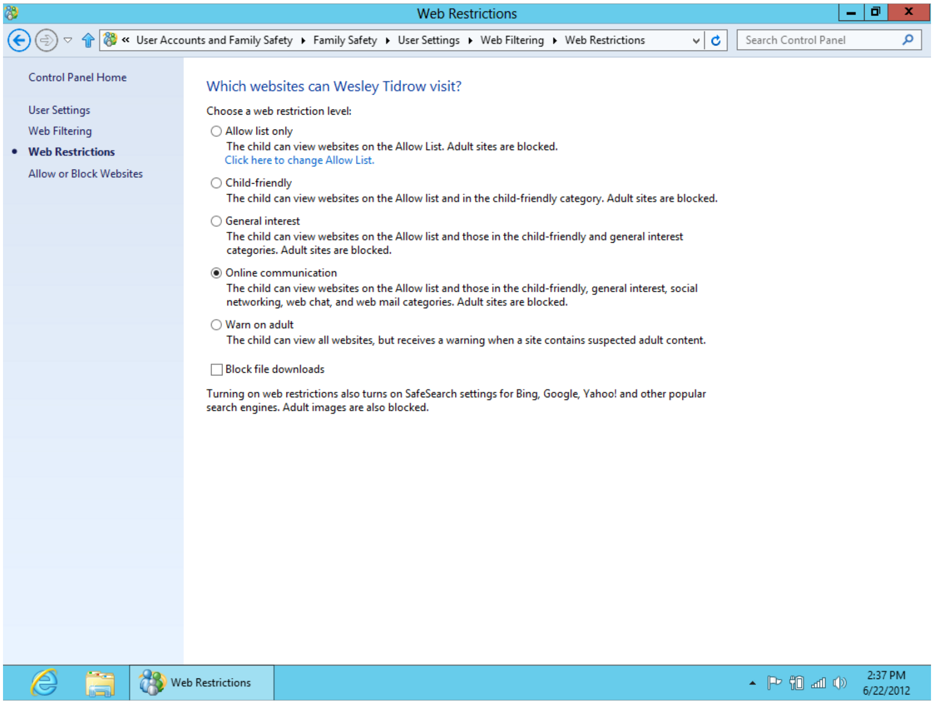
Caution

We need to point out that when you use Family Safety, your child's browsing history is maintained on a Microsoft website (`http://familysafety.microsoft.com`). This can be handy because you have access to the browsing history from any location, such as at work. However, it is a potential privacy risk. If you don't like the idea of your child's Internet usage history being stored on a public server, even if it is secured to prevent others from browsing the history, consider not using Windows 8's Family Safety feature.

Click the option <*username*> Can Only Use the Websites I Allow to be able to set web filtering options. Click Set Web Filtering Level to choose the web restriction levels. The Web Restrictions page opens, which is shown in Figure 6.4. On this page, you can select the Allow List Only option, which enables you to specify a list of sites that a user can access. All other sites on the web, including suspected adult sites, are blocked.

FIGURE 6.4

Use the Web Restrictions page to specify a web restriction level.



Which websites can Wesley Tidrow visit?

Choose a web restriction level:

○ Allow list only
The child can view websites on the Allow List. Adult sites are blocked.
Click here to change Allow List.

○ Child-friendly
The child can view websites on the Allow list and in the child-friendly category. Adult sites are blocked.

○ General interest
The child can view websites on the Allow list and those in the child-friendly and general interest categories. Adult sites are blocked.

● Online communication
The child can view websites on the Allow list and those in the child-friendly, general interest, social networking, web chat, and web mail categories. Adult sites are blocked.

○ Warn on adult
The child can view all websites, but receives a warning when a site contains suspected adult content.

☐ Block file downloads

Turning on web restrictions also turns on SafeSearch settings for Bing, Google, Yahoo! and other popular search engines. Adult images are also blocked.

The other options on the Web Restrictions page relate to content areas that Family Safety monitors automatically. If you choose to let Windows block web content automatically, you have the following categories from which to choose:

- **Child Friendly:** Blocks suspected adult-related websites. Allows your child to view sites on the Allow list and in the child-friendly category. When your child visits popular search engines, such as Google, Bing, and Yahoo!, the SafeSearch setting is automatically enabled, limiting the types of search results your child will see and blocking adult images.
- **General Interest:** Blocks suspected adult-related websites. Allows your child to view child-friendly sites, general interest sites, and those specified on the Allow list. When your child visits popular search engines, such as Google, Bing, and Yahoo!, the SafeSearch setting is automatically enabled, limiting the types of search results your child will see and blocking adult images.
- **Online Communication:** Blocks suspected adult-related websites. Allows your child to view child-friendly sites, general interest sites, social media sites, web chat, web mail, and those specified on the Allow list. When your child visits popular search engines, such as Google, Bing, and Yahoo!, the SafeSearch setting

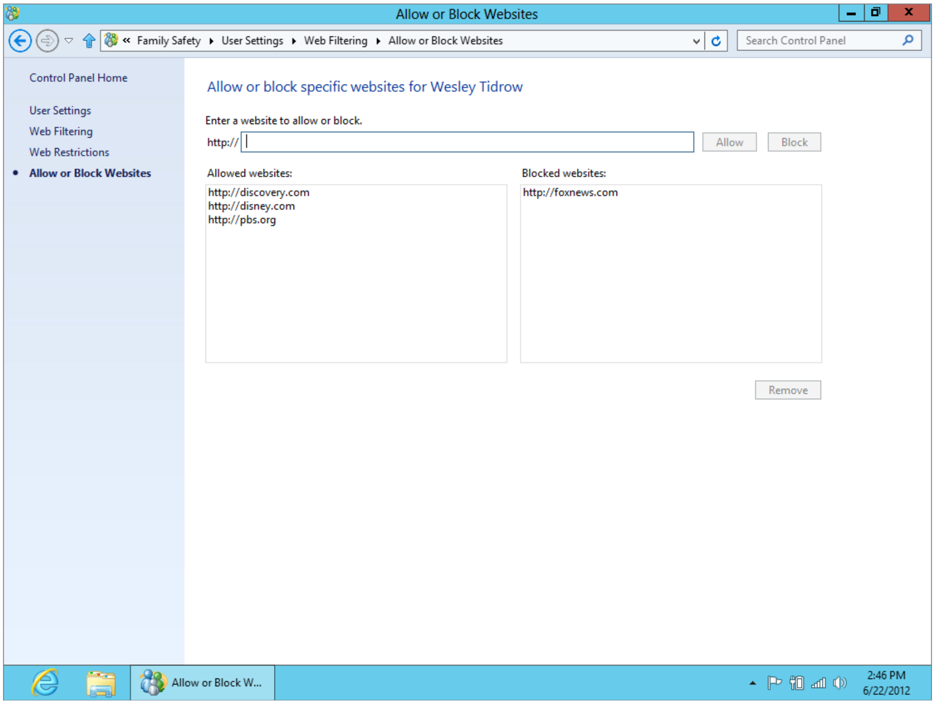
is automatically enabled, limiting the types of search results your child will see and blocking suspected adult images.

- **Warn On Adult:** Does not block suspected adult-related websites, but does display a warning if the site contains adult-related material. All other sites are available. When your child visits popular search engines, such as Google, Bing, and Yahoo!, the SafeSearch setting is automatically enabled, limiting the types of search results your child will see and blocking adult images.

To edit the Allow List Only option, click Allow List Only and then click the Click Here To Change Allow List link. The Allow Or Block Websites page appears. Figure 6.5 shows an example of this page, with some sample websites listed in the Allowed Websites and Blocked Websites lists. On the Allow Or Block Websites page, enter the web address of a site you want to block or allow. Click the appropriate button — Allow or Block — for the site you enter. The site will appear in the Allowed Websites or Blocked Websites list.

FIGURE 6.5

Enter the sites you want to specifically allow and/or specifically block.


Allow or Block Websites
« Family Safety ▸ User Settings ▸ Web Filtering ▸ Allow or Block Websites
Search Control Panel
Control Panel Home
User Settings
Web Filtering
Web Restrictions
Allow or Block Websites
Allow
Block
Remove
Allow or Block W...
2:46 PM
6/22/2012

Allow or block specific websites for Wesley Tidrow

Enter a website to allow or block.

http://

Allowed websites:

http://discovery.com
http://disney.com
http://pbs.org

Blocked websites:

http://foxnews.com

Click the back button at the top right of the window when you finish. This returns you to the Web Restrictions page.

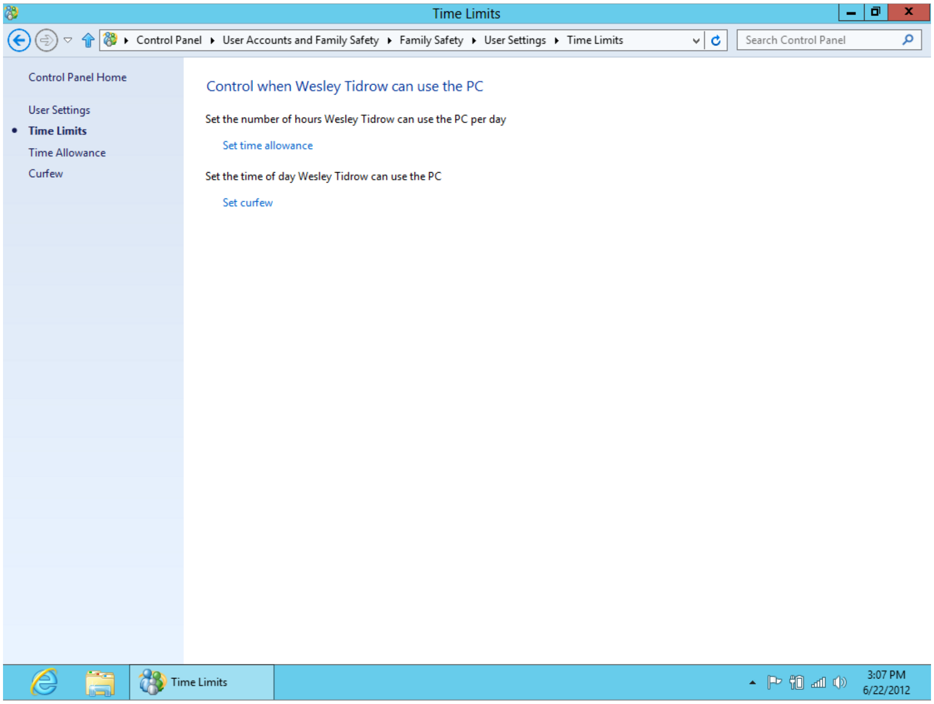
Finally, to prevent your child from downloading files to your computer, select the Block File Downloads option on the Web Restrictions page. Click the User Settings breadcrumb on the address bar to return to the User Settings page when finished setting Web Restrictions.

Setting time limits

To specify times when the child is allowed to use the computer, click Time Limits on the User Settings page (see Figure 6.2 to see what the User Settings page looks like). The Time Limits page opens, which is shown in Figure 6.6. This page has the following two options:

FIGURE 6.6

The Time Limits page


Time Limits
Control Panel
User Accounts and Family Safety
Family Safety
User Settings
Time Limits
Search Control Panel
Control Panel Home
User Settings
Time Limits
Time Allowance
Curfew
Time Limits
3:07 PM
6/22/2012

Control when Wesley Tidrow can use the PC

Set the number of hours Wesley Tidrow can use the PC per day

Set time allowance

Set the time of day Wesley Tidrow can use the PC

Set curfew

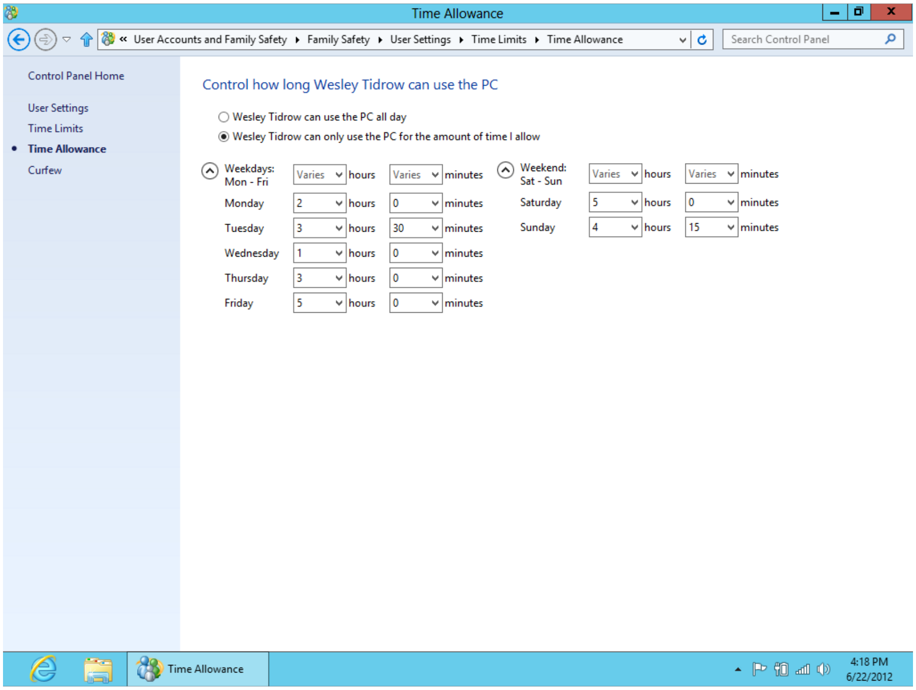
- **Set Time Allowance:** Enables you to specify if a user can use the computer all day, or only for a specified number of hours and/or minutes per day. For example, you might allow your child to use the computer one hour a day during weekdays, but then allow them three hours a day on weekends.
- **Set Curfew:** Enables you to specify only during specified times during the day.

Use the Following steps to set a time allowance for a user:

1. Click the Set Time Allowance link to view the Time Allowance page.
2. Click the <*username*> Can Only Use The PC For The Amount Of Time I Allow link (Figure 6.7 shows an example of weekday and weekend time limits).
3. To set the same time amount for every weekday, use the Hours and Minutes drop-down lists to the right of the Weekdays: Mon-Fri label to indicate how many hours and minutes to allow this user to use the computer. Do the same for the Weekend Sat-Sun setting.
4. If you want to specify different time limits for each day, however, click the down arrow to the left of the Weekdays: Mon-Fri label or Weekend: Sat-Sun label. You are shown options for each day of the weekday and weekend.
5. Click the back button at the top left of the page when you finish.

FIGURE 6.7

The Time Allowance page


Time Allowance
« User Accounts and Family Safety ▸ Family Safety ▸ User Settings ▸ Time Limits ▸ Time Allowance
Search Control Panel
Control Panel Home
User Settings
Time Limits
• Time Allowance
Curfew
Time Allowance
4:18 PM
6/22/2012

Control how long Wesley Tidrow can use the PC

○ Wesley Tidrow can use the PC all day
● Wesley Tidrow can only use the PC for the amount of time I allow

Weekdays: Mon - Fri	Varies	hours	Varies	minutes
Monday	2	hours	0	minutes
Tuesday	3	hours	30	minutes
Wednesday	1	hours	0	minutes
Thursday	3	hours	0	minutes
Friday	5	hours	0	minutes

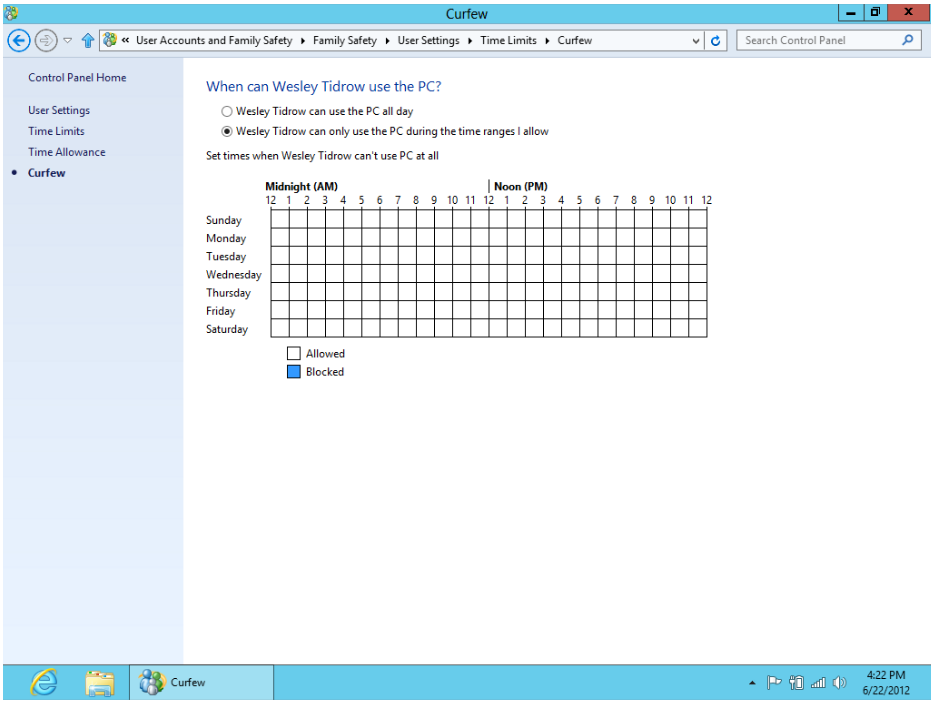
Weekend: Sat - Sun	Varies	hours	Varies	minutes
Saturday	5	hours	0	minutes
Sunday	4	hours	15	minutes

Another way to regulate user access on a computer is to specify the actual time of day a user can be on the computer. Family Safety provides the Set Curfew option to control time of day access. Click Set Curfew on the Time Limits page to set a computer curfew.

In Figure 6.8 you can see the Curfew page. On this page, you see a grid of days and times. Initially, all squares are white, meaning there are no restrictions. You can click any time slot for which the child isn't allowed to use the computer to turn it blue. Blue indicates that the time is blocked and the specified user (in our example Wesley Tidrow) is not allowed to be on the computer during that time. You also can drag the mouse pointer through a longer stretch of time to block more time.

FIGURE 6.8

The Curfew page



Curfew

« User Accounts and Family Safety ▸ Family Safety ▸ User Settings ▸ Time Limits ▸ Curfew

Search Control Panel

Control Panel Home

User Settings
Time Limits
Time Allowance
- **Curfew**

When can Wesley Tidrow use the PC?

○ Wesley Tidrow can use the PC all day
● Wesley Tidrow can only use the PC during the time ranges I allow

Set times when Wesley Tidrow can't use PC at all

Midnight (AM) | Noon (PM)
12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12

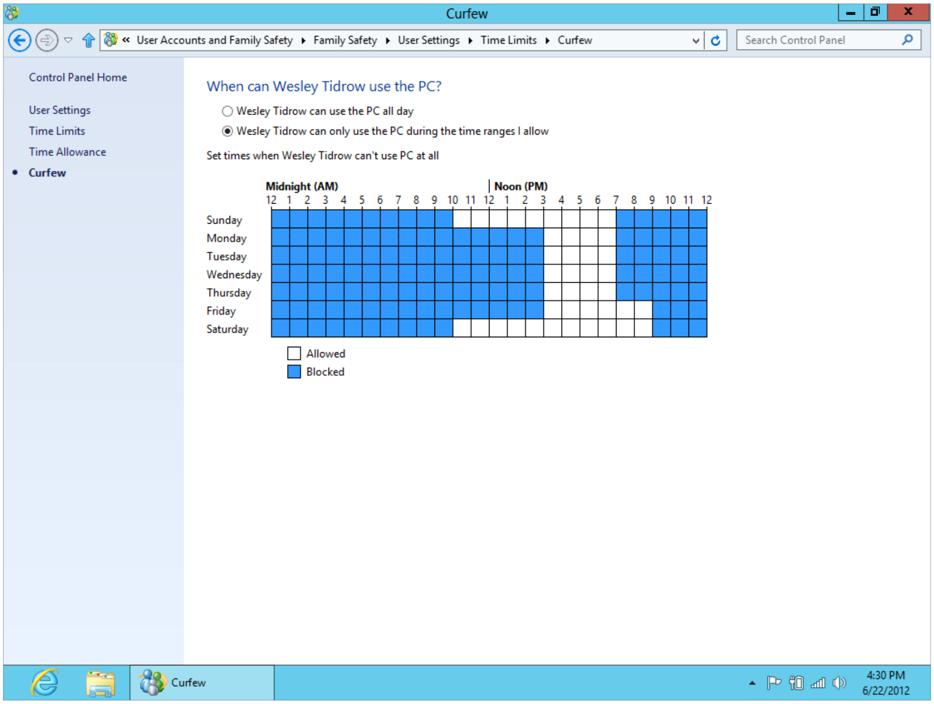
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

☐ Allowed
🟦 Blocked

Optionally, you can place the mouse pointer in the upper-left corner of the grid and drag down to the lower-right corner to block all times. Then drag the mouse pointer through the times that the child is allowed to use the computer. For example, in Figure 6.9, the user is allowed to use the computer from 10:00 a.m. to 7:00 p.m. on Sunday; 3:00 p.m. to 7:00 p.m. on Monday, Tuesday, Wednesday, and Thursday; 3:00 p.m. to 9:00 p.m. on Friday; and 10:00 a.m. to 9:00 p.m. on Saturday.

FIGURE 6.9

White squares indicate when your child is allowed to use the computer.


Curfew
« User Accounts and Family Safety ▸ Family Safety ▸ User Settings ▸ Time Limits ▸ Curfew
Search Control Panel
Control Panel Home
User Settings
Time Limits
Time Allowance
Curfew
Curfew
4:30 PM
6/22/2012

When can Wesley Tidrow use the PC?

○ Wesley Tidrow can use the PC all day

● Wesley Tidrow can only use the PC during the time ranges I allow

Set times when Wesley Tidrow can't use PC at all

	Midnight (AM)												Noon (PM)											
	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
Sunday	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	☐	☐	☐	☐	☐	☐	☐	☐	☐	🟦	🟦	🟦	🟦	🟦
Monday	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	☐	☐	☐	☐	🟦	🟦	🟦	🟦	🟦
Tuesday	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	☐	☐	☐	☐	🟦	🟦	🟦	🟦	🟦
Wednesday	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	☐	☐	☐	☐	🟦	🟦	🟦	🟦	🟦
Thursday	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	☐	☐	☐	☐	🟦	🟦	🟦	🟦	🟦
Friday	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	☐	☐	☐	☐	☐	☐	🟦	🟦	🟦
Saturday	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	🟦	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	🟦	🟦	🟦

☐ Allowed

🟦 Blocked

Click the back button after setting allowable times. You can change those settings at any time by clicking Time Limits. For example, if the child needs a "time out" from the computer, you can block out all the times so that the child can't use the computer at all!

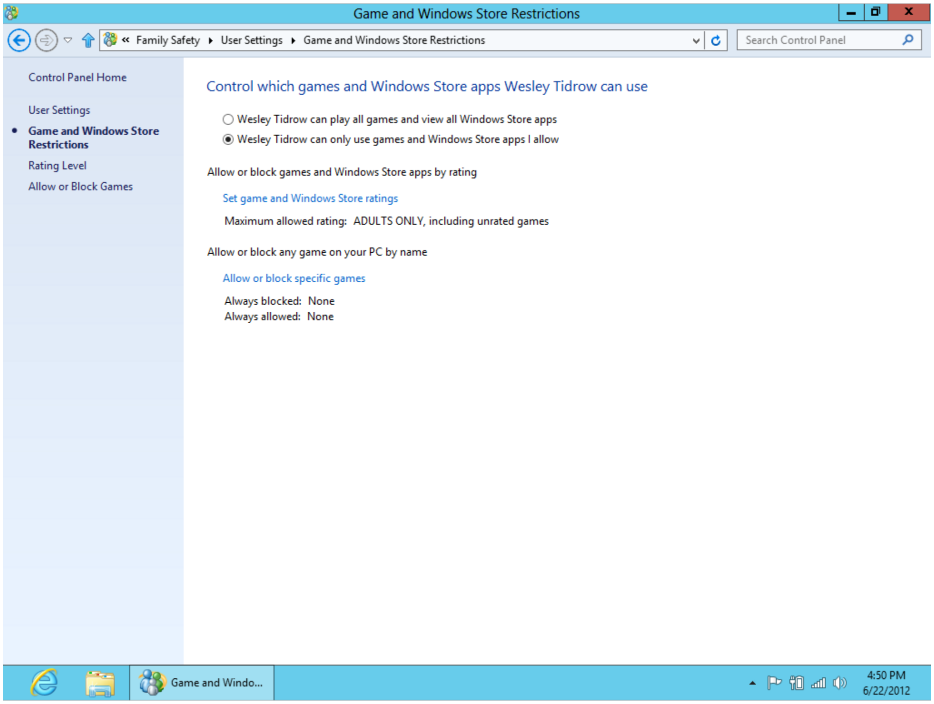
Controlling Windows Store and game play

Family Safety enables you to control access to the Windows Store and to downloading and/or playing games on a computer.

To control access to the Windows Store and to the type of apps that can be downloaded, return to the User Settings page And click the Windows Store And Game Restrictions link. Click the <*username*> Can Only Use Games And Windows Store Apps I Allow option. Figure 6.10 shows the Game And Windows Store Restrictions page after selecting that option.

FIGURE 6.10

The Game and Windows Store Restrictions page


Game and Windows Store Restrictions
« Family Safety ▸ User Settings ▸ Game and Windows Store Restrictions
Search Control Panel
Control Panel Home
User Settings
Game and Windows Store Restrictions
Rating Level
Allow or Block Games
Game and Windo...
4:50 PM
6/22/2012

Control which games and Windows Store apps Wesley Tidrow can use

○ Wesley Tidrow can play all games and view all Windows Store apps

● Wesley Tidrow can only use games and Windows Store apps I allow

Allow or block games and Windows Store apps by rating

Set game and Windows Store ratings

Maximum allowed rating: ADULTS ONLY, including unrated games

Allow or block any game on your PC by name

Allow or block specific games

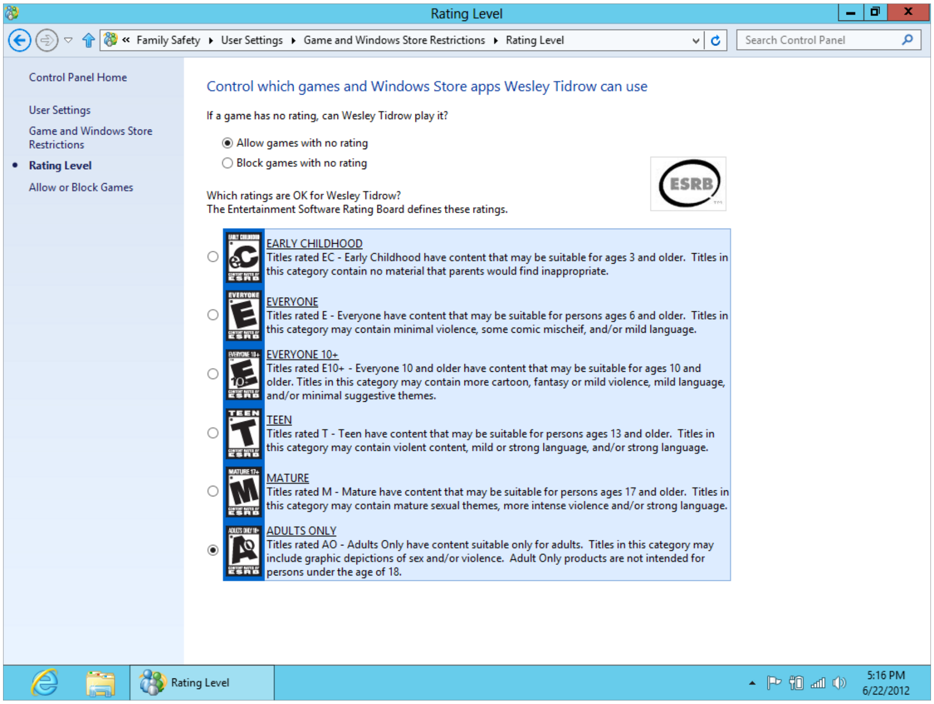
Always blocked: None
Always allowed: None

To allow or block games and Windows apps that can be downloaded by the selected user, use the following steps:

1. Click Set Game And Windows Store Ratings. The Rating Level page appears, as shown in Figure 6.11.
2. To allow games that have no ratings, click Allow Games With No Rating.
3. Conversely, to prevent the user from playing games that have no ESRB rating, choose Block Games With No Rating.
4. To specify the ratings that OK for the user, click one or more of the ratings (such as Early Childhood, Everyone, and so on) that you want to allow the user to access. As you select a rating, a blue box appears around the rating name and description. To unselect a rating, click it again. Notice that as you go down the list of ratings and select a rating, all ratings above it are selected as well. That is, you cannot select a rating lower on the list, such as Teen, without also automatically selecting a rating higher on the list, such as Early Childhood.
5. Click the back button when you finish selecting the games and apps ratings you want to allow.

FIGURE 6.11

The Rating Level page



Control which games and Windows Store apps Wesley Tidrow can use

If a game has no rating, can Wesley Tidrow play it?

● Allow games with no rating
○ Block games with no rating

Which ratings are OK for Wesley Tidrow?
The Entertainment Software Rating Board defines these ratings.

○ EARLY CHILDHOOD
Titles rated EC - Early Childhood have content that may be suitable for ages 3 and older. Titles in this category contain no material that parents would find inappropriate.

○ EVERYONE
Titles rated E - Everyone have content that may be suitable for persons ages 6 and older. Titles in this category may contain minimal violence, some comic mischeif, and/or mild language.

○ EVERYONE 10+
Titles rated E10+ - Everyone 10 and older have content that may be suitable for ages 10 and older. Titles in this category may contain more cartoon, fantasy or mild violence, mild language, and/or minimal suggestive themes.

○ TEEN
Titles rated T - Teen have content that may be suitable for persons ages 13 and older. Titles in this category may contain violent content, mild or strong language, and/or strong language.

○ MATURE
Titles rated M - Mature have content that may be suitable for persons ages 17 and older. Titles in this category may contain mature sexual themes, more intense violence and/or strong language.

● ADULTS ONLY
Titles rated AO - Adults Only have content suitable only for adults. Titles in this category may include graphic depictions of sex and/or violence. Adult Only products are not intended for persons under the age of 18.

To control the child's game play, return to the User Settings page and click Games. Doing so opens a page for controlling if you child is allowed to play games on this computer. If you don't want the child to use the computer for game play at all, choose No. Otherwise, choose Yes.

NOTE

ESRB stands for Entertainment Software Rating Board, an independent third party that rates games for age appropriateness and specific content. The ratings are similar to movie ratings, but specific to computer games. To find out more information about the ESRB rating system, click on the ESRB logo on the Rating Level page. Windows connects to the Entertainment Software Rating Board web site, which provides information about ESRB.

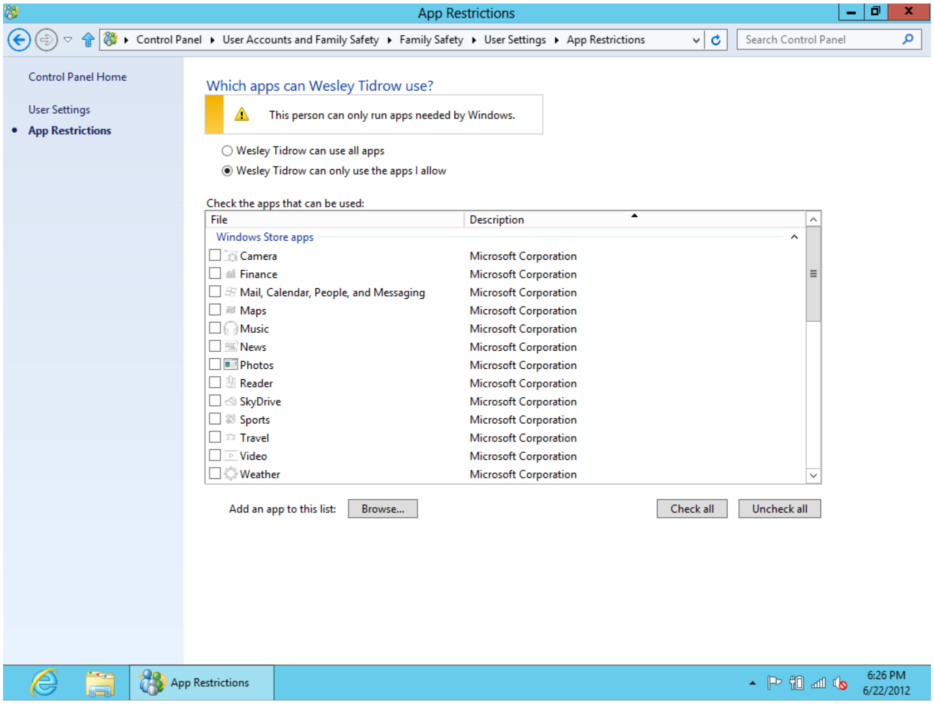
If you want to allow or block games that are installed on your computer, click the Allow Or Block Specific Games link on the Game And Windows Store Restrictions page. The Allow Or Block Games page appears. Then you can scroll down the page and block more games based on content type. To block games based on content, select the type of content you want to block. When you get to the bottom of the list and have blocked all the content that you feel is inappropriate, click the back button.

Blocking and allowing Apps

With Family Safety, you can control the apps and programs that a user can run on the computer. Clicking App Restrictions on the User Settings page displays the App Restrictions page. By default, all users have access to run all apps. To limit the apps that a user can run, click the <*username*> Can Only Use The Apps I Allow link. When you do this, as shown in Figure 6.12, a message appears that indicates that the selected user can run only the apps and programs needed by Windows. Also, after a few moments, a list of apps and programs appear at the bottom of the page, which shows all installed apps and programs.

FIGURE 6.12

The App Restrictions page


App Restrictions
Control Panel ▸ User Accounts and Family Safety ▸ Family Safety ▸ User Settings ▸ App Restrictions
Search Control Panel
Control Panel Home
User Settings
App Restrictions
Add an app to this list:
Browse...
Check all
Uncheck all
App Restrictions
6:26 PM
6/22/2012

Which apps can Wesley Tidrow use?

⚠ This person can only run apps needed by Windows.

○ Wesley Tidrow can use all apps

● Wesley Tidrow can only use the apps I allow

Check the apps that can be used:

File	Description
Windows Store apps	
☐ Camera	Microsoft Corporation
☐ Finance	Microsoft Corporation
☐ Mail, Calendar, People, and Messaging	Microsoft Corporation
☐ Maps	Microsoft Corporation
☐ Music	Microsoft Corporation
☐ News	Microsoft Corporation
☐ Photos	Microsoft Corporation
☐ Reader	Microsoft Corporation
☐ SkyDrive	Microsoft Corporation
☐ Sports	Microsoft Corporation
☐ Travel	Microsoft Corporation
☐ Video	Microsoft Corporation
☐ Weather	Microsoft Corporation

You use the list of apps to specify which apps are allowed by the selected user. Select the apps that deem OK for the user to use. After you select the first app, notice that the warning called This Person Can Only Run Apps Needed By Windows disappears.

If you do not see an app or program that you know is installed on your computer, click the Browse button next to Add An App To This List. You then can navigate to the app or program file (programs usually are `.exe` files), select it, and click Open. That app or program will be listed in the Check The Apps That Can Be Used list.

TIP

If you want to allow a user to use all apps and programs but a few, consider clicking the Check All button. This selects all the apps and programs in the Check The Apps That Can Be Used list. Then find the individual apps or programs you want to restrict access to and click its checkbox to deselect it. Continue this until your list appears the way you want it to.

When you finish with the App Restrictions page, click the back button to return to the User Settings page.

Viewing Family Safety Activity Reports

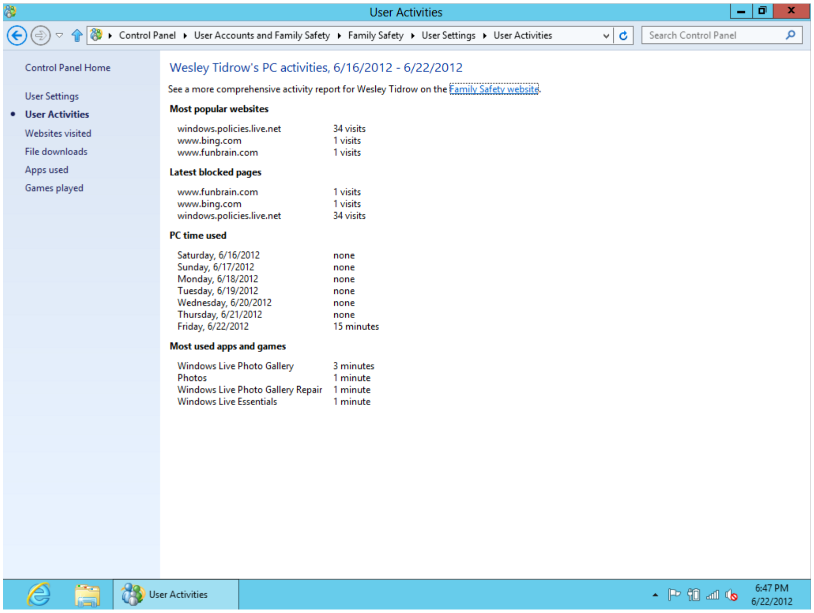
Windows 8's Family Safety tool provides user activity reports. User activity reports provide a summary of user activity as it relates to Family Safety settings, including the following items:

- Most Popular Websites
- Latest Blocked Page
- PC Time Used
- Most Used Apps and Games

To see this report, click the View Activity Reports on the User Settings page. Figure 6.13 shows an example of a report. Notice in the Latest Blocked Pages list that the site called `www.bing.com` appears. When the user visited that page, he was presented with a Family Safety “This Page Is Blocked” page, as shown in Figure 6.14. In our example we restricted our example user (Wesley Tidrow) to only three websites (Discovery.com, Disney.com, and PBS.org) that he can visit. Bing.com is not included as an allowable website for him.

FIGURE 6.13

The User Activities page


User Activities
Control Panel ▸ User Accounts and Family Safety ▸ Family Safety ▸ User Settings ▸ User Activities
Search Control Panel
Control Panel Home
User Settings
User Activities
Websites visited
File downloads
Apps used
Games played
User Activities
6:47 PM
6/22/2012

Wesley Tidrow's PC activities, 6/16/2012 - 6/22/2012

See a more comprehensive activity report for Wesley Tidrow on the Family Safety website.

Most popular websites

windows.policies.live.net	34 visits
www.bing.com	1 visits
www.funbrain.com	1 visits

Latest blocked pages

www.funbrain.com	1 visits
www.bing.com	1 visits
windows.policies.live.net	34 visits

PC time used

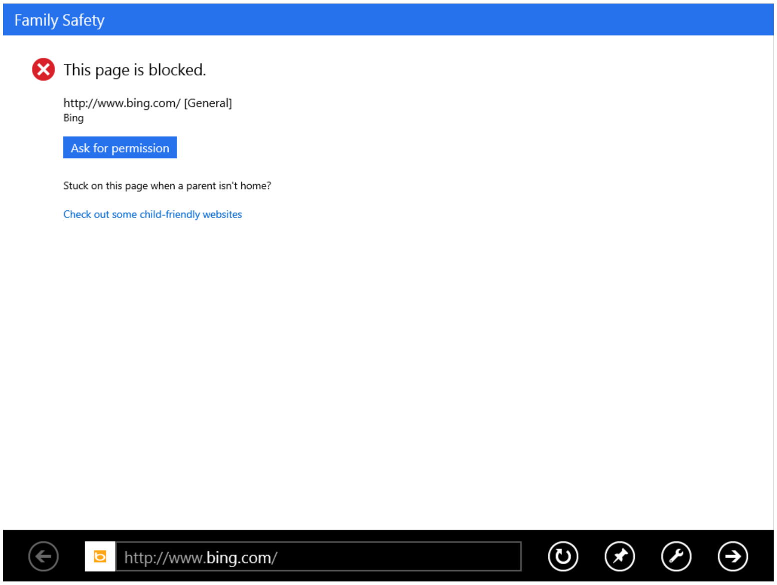
Saturday, 6/16/2012	none
Sunday, 6/17/2012	none
Monday, 6/18/2012	none
Tuesday, 6/19/2012	none
Wednesday, 6/20/2012	none
Thursday, 6/21/2012	none
Friday, 6/22/2012	15 minutes

Most used apps and games

Windows Live Photo Gallery	3 minutes
Photos	1 minute
Windows Live Photo Gallery Repair	1 minute
Windows Live Essentials	1 minute

FIGURE 6.14

What a user sees if a website is blocked using Family Safety


Family Safety
Ask for permission
http://www.bing.com/

This page is blocked.

http://www.bing.com/ [General]
Bing

Stuck on this page when a parent isn't home?

Check out some child-friendly websites

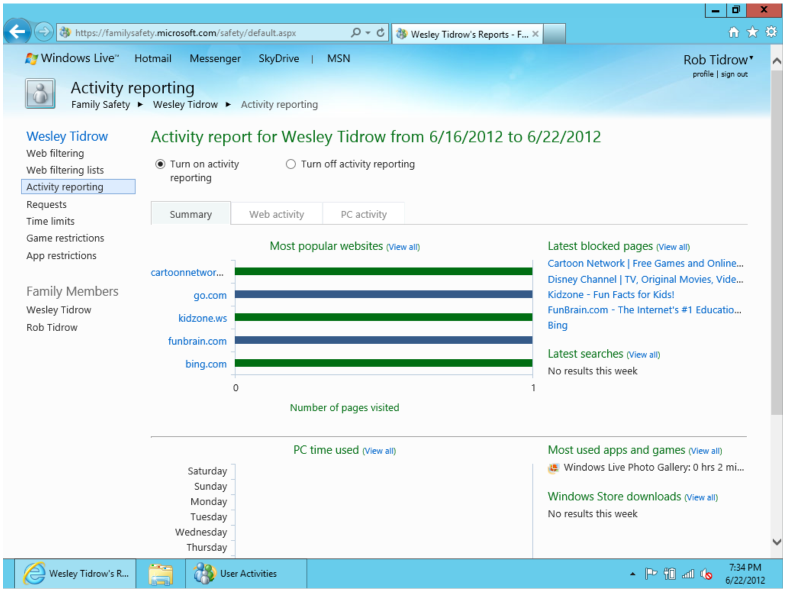
Viewing Family Safety Online Reports

A feature available with the Windows 8 Family Safety tool is access to an online Family Safety website. This website includes additional reports about Family Safety settings and allows you to modify Family Safety settings. To access the Family Safety online site, use the following steps:

1. Click the Family Safety website link on the User Activities page. Internet Explorer launches.
2. If prompted, enter your Windows Live sign in credentials, which you need to have to use the online Family Safety features. If you do not have a Windows Live account, click the Sign Up button on the left side of the screen and follow the onscreen instructions. If you logged into Windows 8 using a Microsoft account, you can use those credentials as your Windows Live username and password.
3. Once at the Activity Reporting website (as shown in Figure 6.15), use the links on the left side of the page to view Family Safety activities and features. Most of these links mirror those found on the Family Safety pages that we already covered. However, if you click the Request link, you will see those pages that a user has requested to view. Click one of the links to visit that site and to determine if you want to unblock its access. Figure 6.16 shows a list of requested websites to unblock.
4. Select an option from the Response drop-down list, such as Allow For This Account Only, to specify the type of access you want to give, if any.
5. Click Save to save any changes to settings you might make.

FIGURE 6.15

Online Family Safety activity reports


https://familysafety.microsoft.com/safety/default.aspx
Wesley Tidrow's Reports - F...
Windows Live
Hotmail
Messenger
SkyDrive
MSN
Rob Tidrow
profile | sign out
Activity reporting
Family Safety ▸ Wesley Tidrow ▸ Activity reporting
Wesley Tidrow
Web filtering
Web filtering lists
Activity reporting
Requests
Time limits
Game restrictions
App restrictions
Family Members
Wesley Tidrow
Rob Tidrow
Summary
Web activity
PC activity
Most popular websites (View all)
cartoonnetwor...
go.com
kidzone.ws
funbrain.com
bing.com
0
1
Number of pages visited
Latest blocked pages (View all)
Latest searches (View all)
PC time used (View all)
Saturday
Sunday
Monday
Tuesday
Wednesday
Thursday
Most used apps and games (View all)
Windows Store downloads (View all)
Wesley Tidrow's R...
User Activities
7:34 PM
6/22/2012

Activity report for Wesley Tidrow from 6/16/2012 to 6/22/2012

● Turn on activity reporting ○ Turn off activity reporting

Latest blocked pages (View all)
Cartoon Network | Free Games and Online...
Disney Channel | TV, Original Movies, Vide...
Kidzone - Fun Facts for Kids!
FunBrain.com - The Internet's #1 Educatio...
Bing

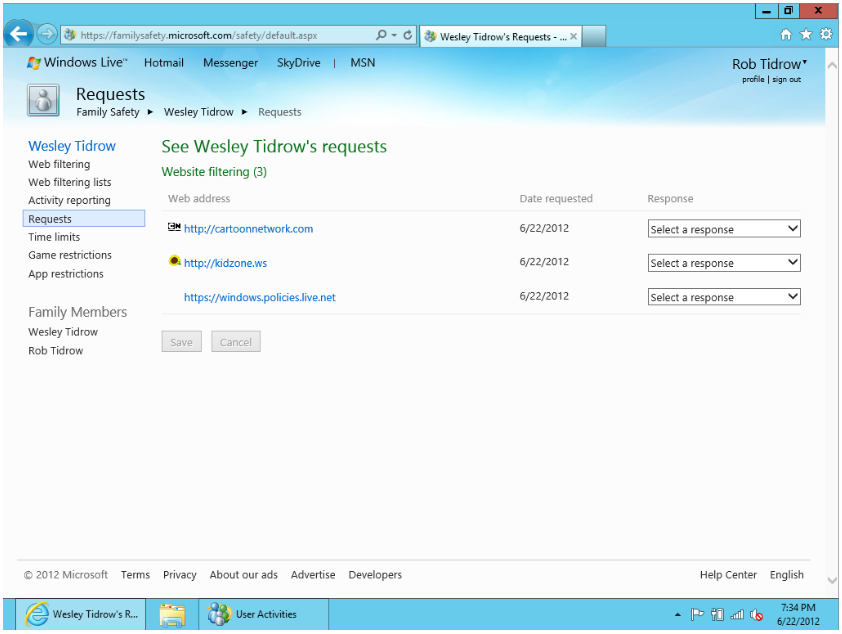
Latest searches (View all)
No results this week

Most used apps and games (View all)
Windows Live Photo Gallery: 0 hrs 2 mi...

Windows Store downloads (View all)
No results this week

FIGURE 6.16

Viewing a list of requested websites to unblock for a user


https://familysafety.microsoft.com/safety/default.aspx
Wesley Tidrow's Requests - ...
Windows Live
Hotmail
Messenger
SkyDrive
MSN
Rob Tidrow
profile | sign out
Requests
Family Safety ▸ Wesley Tidrow ▸ Requests
Wesley Tidrow
Web filtering
Web filtering lists
Activity reporting
Requests
Time limits
Game restrictions
App restrictions
Family Members
Wesley Tidrow
Rob Tidrow
Save
Cancel
© 2012 Microsoft
Terms
Privacy
About our ads
Advertise
Developers
Help Center
English
Wesley Tidrow's R...
User Activities
7:34 PM
6/22/2012

See Wesley Tidrow's requests

Website filtering (3)

Web address	Date requested	Response
http://cartoonnetwork.com	6/22/2012	Select a response
http://kidzone.ws	6/22/2012	Select a response
https://windows.policies.live.net	6/22/2012	Select a response

The changes you make online will copy down to your local version of Family Safety. The next time you open the User Settings page for a user, your online changes should be reflected.

You can view these online reports and options for any user at any time as long as you have Internet access. This comes in handy if you are away from your home computer and you want to view your child's online activity and see if any requested sites have been added to the Requests page.

When you sign onto Family Safety online, Microsoft starts sending you e-mails with tips, additional information about Family Safety, and a link to the Family Safety website. You can opt out of the e-mails by clicking the Change Email Frequency link on the top of the Microsoft Family Safety e-mail. This connects you to the Family Safety website, on which change the frequency in the Email Notifications area. You might, however, want to keep these notifications turned on until you become more familiar with Family Safety.

Other Online Safety Resources

Technical approaches to online safety, such as parental controls, are a good thing. But they cannot cover all possible risks. Kids can get involved with instant messaging and chats in which people aren't always who they claim to be.

Children should be taught some basic ground rules. For example, children should never give out personal information, such as where they live or go to school. If anything makes them feel uncomfortable, they should report it to their parents. They should never agree to meet with anyone you don't know.

As a parent, you have many online resources for sharing your concerns with others and getting advice. You don't need to be a technical whiz to take advantage of these sites. Here are some you might want to add to your Favorites:

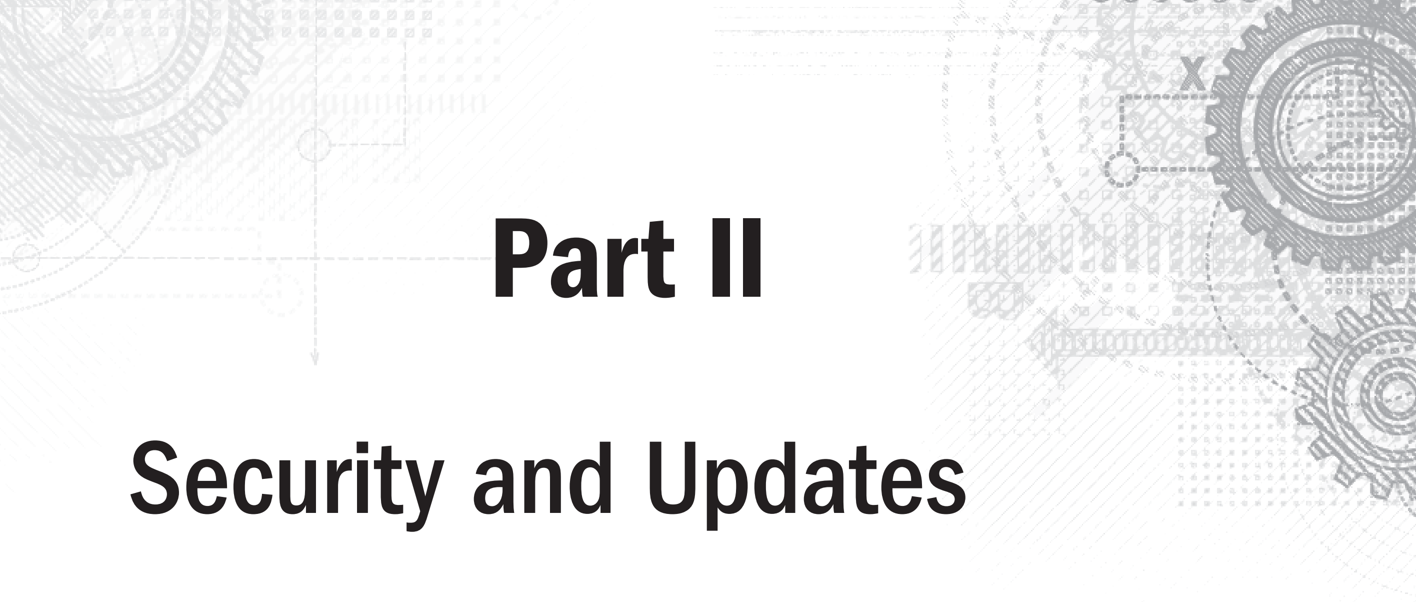
- **Safe Kids:** `www.safekids.com`
- **Microsoft Safety and Security Center:** `www.microsoft.com/security/family-safety/childsafety-internet.aspx`
- **CyberAngels:** `www.cyberangels.org`
- **GetNetWise:** `www.kids.getnetwise.org`

Wrap-Up

The Internet is here to stay. Today's children will likely use it as their main source of information and communication throughout their lives. The Internet is also very much a public place, a direct reflection of the world at large. Although most of the people online are perfectly normal, the Internet has its share of wackos and other undesirables, just as the real world does.

Knowledge is a parent's best defense against Internet dangers. A parent who has been out of the loop in terms of technical advances over recent years will feel some helplessness and insecurity about keeping kids safe online. Setting up user accounts and parental controls is a great way to get started in taking control of kids' computer use. Monitoring their activity is another. Here's a quick wrap-up of the main points covered in this chapter:

- A parent should set up at least one password-protected administrative user account to take control of the computer.
- Each person who uses the computer can have a standard account, which offers greater security than an administrative account.
- The person with the administrative account can use parental control features of Microsoft Family Safety to set limits on Internet and computer usage for people using standard accounts.
- The administrator can also use activity reports to monitor standard users' activities.
- Parents can find support and stay up-to-date through many websites dedicated to online safety.



Part II

Security and Updates

IN THIS PART

Chapter 7
Help, Support, and Troubleshooting

Chapter 8
Troubleshooting Startup Problems

CHAPTER 7

Help, Support, and Troubleshooting

IN THIS CHAPTER

- Learning about Help And Support
- Getting help from people
- Troubleshooting

Have you ever heard the saying, “If all else fails, read the instructions?” It’s sarcastic, of course. But it’s also somewhat profound because it touches on our natural desire for immediate gratification. When it comes to wanting and expecting immediate gratification, we’re as guilty as anybody.

Unfortunately, there are no one-size-fits-all instructions for using a computer. If all instructions for all types of computers and programs were combined, it would be bigger than multiple sets of the *Encyclopedia Britannica* — actually, probably big enough to fill a decent-sized public library. Truth is, you can do so many things with a computer, and such a huge volume of information is available, that no single source of information could possibly exist.

To survive in the digital world these days, you have to be resourceful. And being resourceful means having enough skills to find the information you need, when you need it, wherever that information might be. But being resourceful isn’t a skill you’re born with. You have to *learn* to be resourceful. And that’s what this chapter is all about.

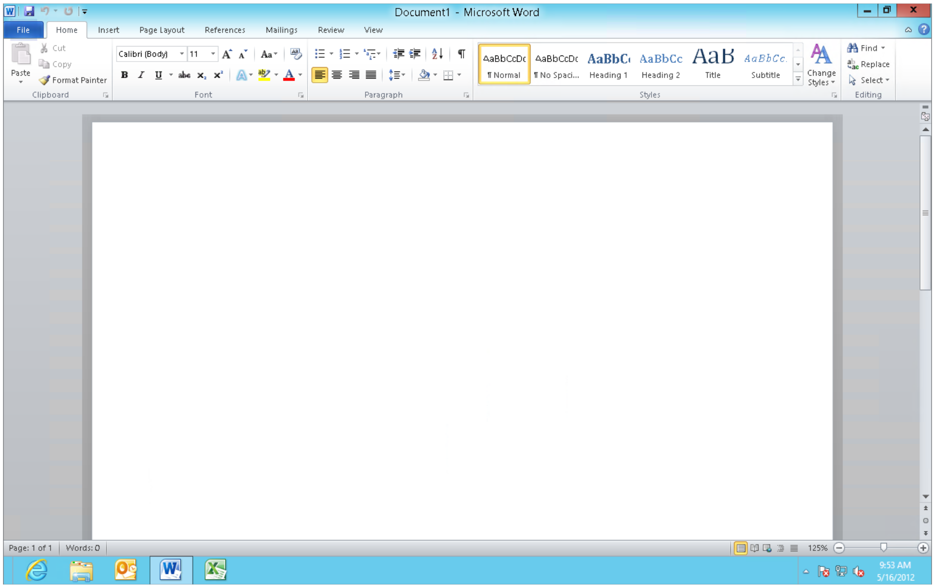
Introducing Help And Support

By far, the most important resource for getting the information you need, when you need it, is the Help And Support built into Windows 8. It doesn’t cover everything in great depth. But it does cover all the main features with a focus on the tasks most people want to perform with their computers.

You can get to Windows 8's Help in a couple of ways. When you're in a traditional Windows program such as Word, Paint, or any other, click the Help button (if any) at the upper-right corner of your screen (often a question mark, see Figure 7.1). Or if the program has a menu bar, click Help in that menu bar to see options for getting help. Or press the Help key (F1).

FIGURE 7.1

A sample Help button in a Windows program


Document1 - Microsoft Word
File
Home
Insert
Page Layout
References
Mailings
Review
View
Paste
Cut
Copy
Format Painter
Clipboard
Calibri (Body)
11
Font
Paragraph
AaBbCcDc
¶ Normal
AaBbCcDc
¶ No Spaci...
AaBbCc
Heading 1
AaBbCc
Heading 2
AaB
Title
AaBbCc.
Subtitle
Styles
Change Styles
Find
Replace
Select
Editing
Page: 1 of 1
Words: 0
125%
9:53 AM
5/16/2012

Caution

If your keyboard has a Function Lock (or F Lock) key, the function keys (F1 through F12) work only if that key is on. This is often the case on laptops.

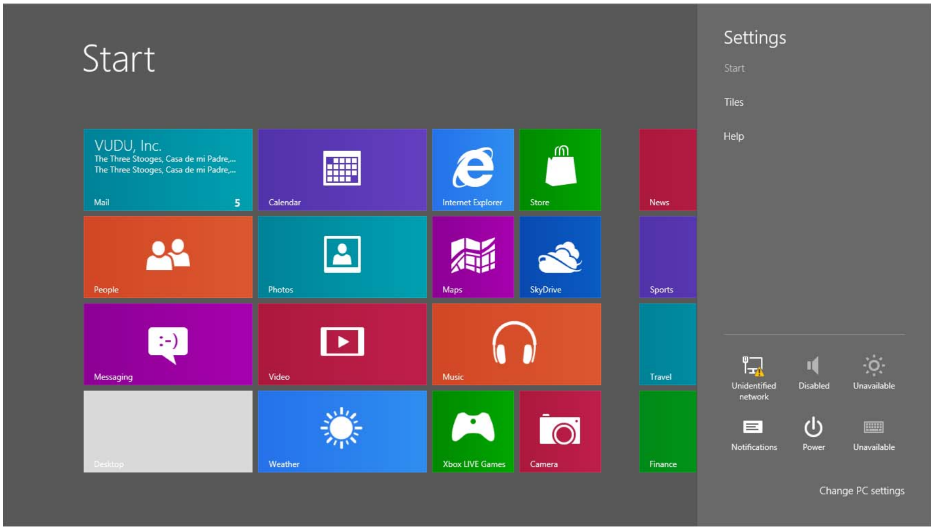
When you access help from a particular program, you get help that's relevant to the program or component from which you requested the help.

Whether a given Windows 8 app will have Help content depends entirely on the app. To view options for a Windows 8 app, right-click in the app to bring up the App Bar, or slide up from the bottom of the display.

To get more general help with Windows 8, open the Charms Bar from the Start screen, click Settings, and then click Help (see Figure 7.2). Windows 8 displays a selection of Help items for specific tasks such as searching and rearranging tiles on the Start menu.

FIGURE 7.2

Access Help items from the Start menu.


Start
VUDU, Inc.
The Three Stooges, Casa de mi Padre,...
The Three Stooges, Casa de mi Padre,...
Mail
5
Calendar
Internet Explorer
Store
News
People
Photos
Maps
SkyDrive
Sports
Messaging
Video
Music
Travel
Desktop
Weather
Xbox LIVE Games
Camera
Finance
Settings
Start
Tiles
Help
Unidentified network
Disabled
Unavailable
Notifications
Power
Unavailable
Change PC settings

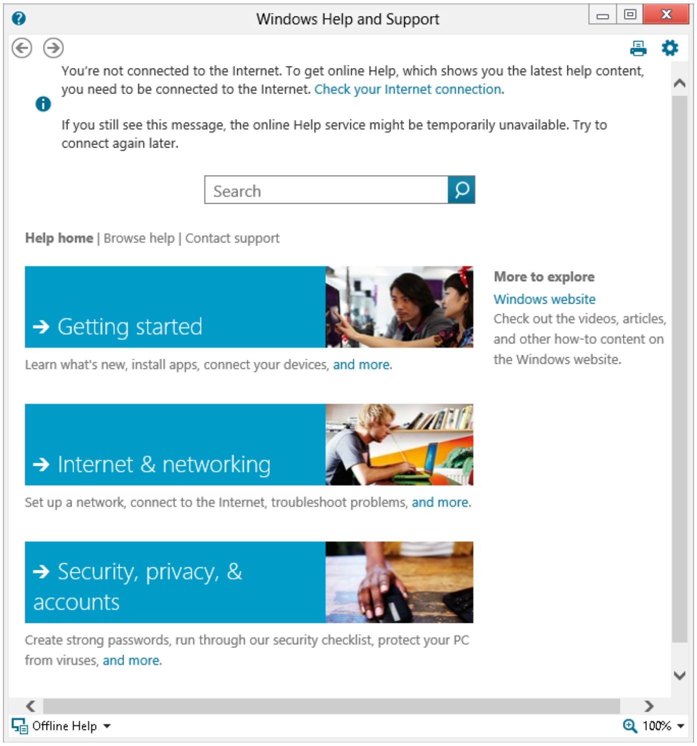
You can also open Windows Help And Support which provides help on a range of topics. To open Windows Help And Support, shown in Figure 7.3, open the Charms Bar from the Windows desktop, click Settings, and then click Help. Figure 7.3 shows Windows Help And Support.

If you don't see a Help option on your Start menu, don't panic. Some computer manufacturers replace that with their own Help or Support option. Clicking that option takes you to a help page that's similar to the Windows 8 Help page. It's just rearranged to promote your computer manufacturer.

See "Customizing the Start Screen" in Chapter 12, "Personalizing the Windows 8 Interface," for the full scoop on Start menu options.

FIGURE 7.3

The Windows Help And Support home page



You're not connected to the Internet. To get online Help, which shows you the latest help content, you need to be connected to the Internet. Check your Internet connection.

If you still see this message, the online Help service might be temporarily unavailable. Try to connect again later.

Learn what's new, install apps, connect your devices, and more.

Set up a network, connect to the Internet, troubleshoot problems, and more.

Create strong passwords, run through our security checklist, protect your PC from viruses, and more.

More to explore

Windows website

Check out the videos, articles, and other how-to content on the Windows website.

For beginners and casual users, the Get Started topic on the Windows Help And Support page is the best place to start, especially when you need reminders of key terms and concepts that the rest of Help assumes that you already know. These terms and concepts include topics such as hardware, software, point, click, double-click, right-click, drag, tap, swipe, slide, function keys, navigation keys, keyboard shortcuts, menu, command, desktop, icon, taskbar, Sidebar, program, window, document, minimize, maximize, restore, scroll bar, open, save, close, undo, file, folder, move, copy, delete, and print.

If you already have all those terms and concepts down pat, use the Browse Help topics item to browse through all the Help content. Or, click in the Search box, type a search keyword or phrase, and click the Search button to search for topics.

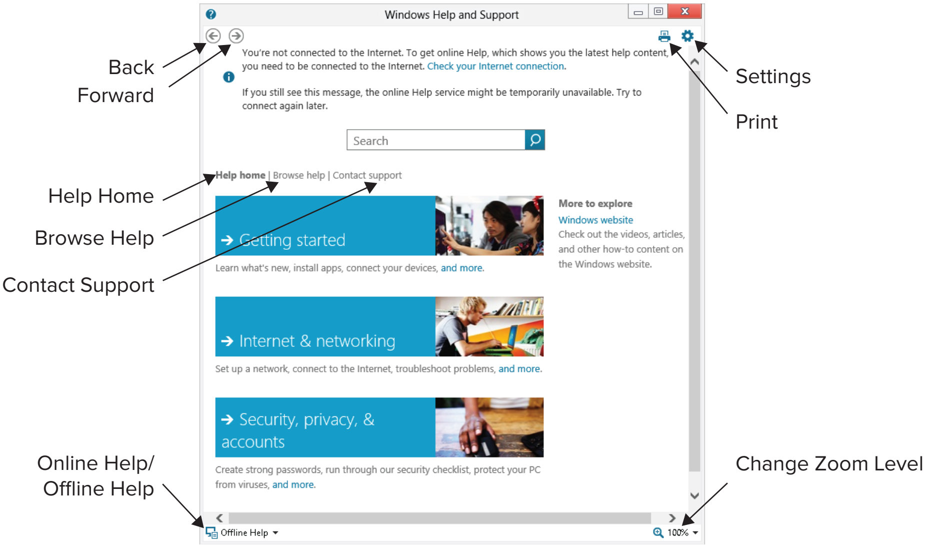
Navigating Help

Within the Help And Support Center, you see the buttons shown in Figure 7.4. (On your own screen, you can point to any button to see its name.) Here's what each button offers:

- **Back:** Takes you back to the help page you just left (if any). Disabled (dimmed) when there's no page to go back to.
- **Forward:** Returns to the page you just backed out of. Disabled if you didn't just back out of a page.
- **Help Home:** Takes you to the same page that opens when you first open Help And Support.
- **Print:** Lets you print whatever help information you're currently viewing.
- **Browse Help:** Takes you to the Table Of Contents.
- **Contact Support:** Takes you to options for getting online help from a support engineer.
- **Online Help/Offline Help:** Lets you choose between using online Help or offline Help.
- **Settings:** Provides options for enabling or disabling online help and participation in Help Experience Improvement program.
- **Change Zoom Level:** Use this button to zoom in or out.

FIGURE 7.4

The Help And Support Center controls


Back
Forward
Help Home
Browse Help
Contact Support
Online Help/
Offline Help
Settings
Print
Change Zoom Level
Windows Help and Support
Search
Help home | Browse help | Contact support
Getting started
More to explore
Windows website
Internet & networking
Security, privacy, & accounts
Offline Help
100%

You're not connected to the Internet. To get online Help, which shows you the latest help content, you need to be connected to the Internet. Check your Internet connection.

If you still see this message, the online Help service might be temporarily unavailable. Try to connect again later.

Learn what's new, install apps, connect your devices, and more.

Check out the videos, articles, and other how-to content on the Windows website.

Set up a network, connect to the Internet, troubleshoot problems, and more.

Create strong passwords, run through our security checklist, protect your PC from viruses, and more.

Tip

You can point to any button in the Help And Support Center to see its name.

Using the Search box

The Search box at the top of Windows Help and Support is strictly for searching Help. It searches both the Help that's in your computer and the more extensive online Help (if you're online when you use the Search box).

Use the Search box as you would the index at the back of a book. It works best if you know the exact term you're looking for and how to spell that term. But even if you don't know how to spell it exactly, the Search feature works pretty well. For example, a search for **desk top** (wrong spelling) returns roughly the same results as **desktop** (correct spelling).

You can also phrase your search as a question: for example, **What is a user account?** or **How do I create a user account?**

Press Enter or click the magnifying glass button after typing your search term or question. The results will be a series of links to pages in Help that are relevant to your search phrase or question.

Online Help and offline Help

There are really two types of help in Windows 8. There's *offline Help*, which you can access at any time because it's stored on your device. There's also *online Help*, which you can access only when you're connected to the Internet. The online Help is more extensive than the offline Help.

In the Help window's lower-left corner, you'll see an indicator that tells you which Help you're currently accessing (see Figure 7.5). Click the indicator to choose to use Get Offline Help (only), or Online Help (which includes both offline Help and online Help).

Windows 8's Help Is Only About Windows 8

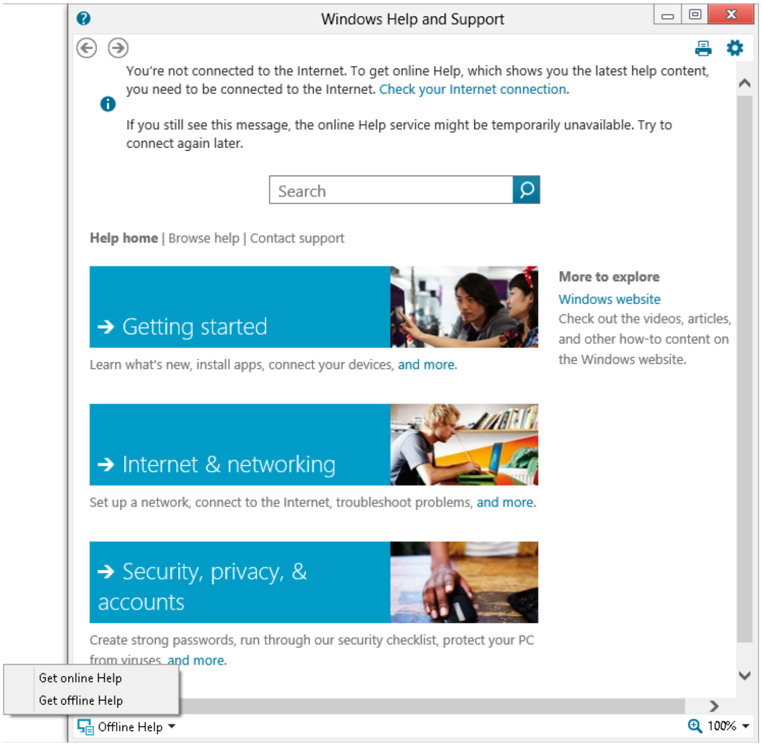
It's important to understand that the Help and Support in Windows 8 is *only* for Windows 8 and the programs that come with Windows 8. There are at least 100,000 other programs you can purchase separately. Windows 8's Help And Support doesn't cover any of those programs.

When you want help with some program other than Windows 8, you have to look in the Help for *that* program, not Windows 8's Help. Typically, you do so by choosing Help from an individual program's menu bar or by pressing F1 while that program is open and in the active window.

E-mail is a good example. E-mail isn't really a component of Windows 8. E-mail is a service provided by your ISP (Internet service provider) or a third party, as with Hotmail or Google Mail. Your ISP or mail service provider is your best resource for questions about e-mail. However, the Help content included with your e-mail program (if other than a web browser, such as Microsoft Office Outlook) is the best place to learn how to use that program.

FIGURE 7.5

Online/offline options


Windows Help and Support
Search
Help home | Browse help | Contact support
Getting started
Internet & networking
Security, privacy, & accounts
More to explore
Windows website
Get online Help
Get offline Help
Offline Help
100%

You're not connected to the Internet. To get online Help, which shows you the latest help content, you need to be connected to the Internet. Check your Internet connection.

If you still see this message, the online Help service might be temporarily unavailable. Try to connect again later.

Learn what's new, install apps, connect your devices, and more.

Set up a network, connect to the Internet, troubleshoot problems, and more.

Create strong passwords, run through our security checklist, protect your PC from viruses, and more.

Check out the videos, articles, and other how-to content on the Windows website.

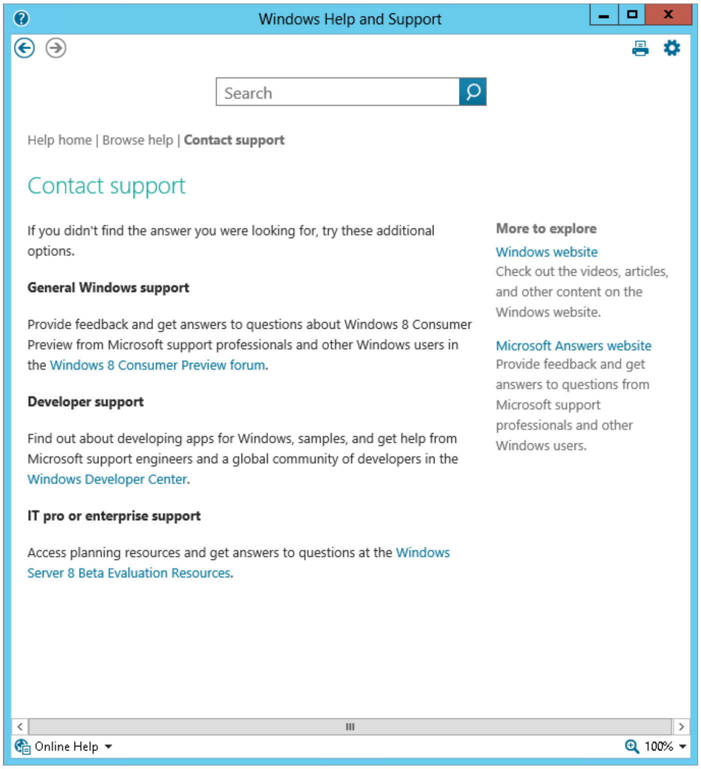
Help from People

When you can't figure something out by guessing, usually your next thought is to call someone on the phone. Whether that strategy works depends on whom you call. Many of the larger companies charge for telephone support, and it can be quite expensive, especially if you don't know all the terminology. When you don't know the terminology, it's hard to ask the question and even harder to understand the answer.

You have some online alternatives to using the phone that enable you to get help from another person without spending a fortune. Clicking the Contact Support link in Help And Support shows these alternatives (see Figure 7.6). Click the link in each section to get more information about the selected option.

FIGURE 7.6

Resources for live help



Help home | Browse help | **Contact support**

Contact support

If you didn't find the answer you were looking for, try these additional options.

General Windows support

Provide feedback and get answers to questions about Windows 8 Consumer Preview from Microsoft support professionals and other Windows users in the Windows 8 Consumer Preview forum.

Developer support

Find out about developing apps for Windows, samples, and get help from Microsoft support engineers and a global community of developers in the Windows Developer Center.

IT pro or enterprise support

Access planning resources and get answers to questions at the Windows Server 8 Beta Evaluation Resources.

More to explore

Windows website
Check out the videos, articles, and other content on the Windows website.

Microsoft Answers website
Provide feedback and get answers to questions from Microsoft support professionals and other Windows users.

Remote Assistance

Remote Assistance is a technology that allows another person to see what's on your computer screen and operate your computer with his or her mouse and keyboard. The idea here is to turn control of your computer over to a trusted expert to resolve your problem.

We're not aware of any companies that will connect to and fix your computer for free, but your company may have an internal support group that provides that service. For home computers, your trusted expert will likely be a knowledgeable friend or family member. For more information, see "Using Remote Assistance" in Chapter 20, "Using Computers Remotely."

Microsoft Answers website

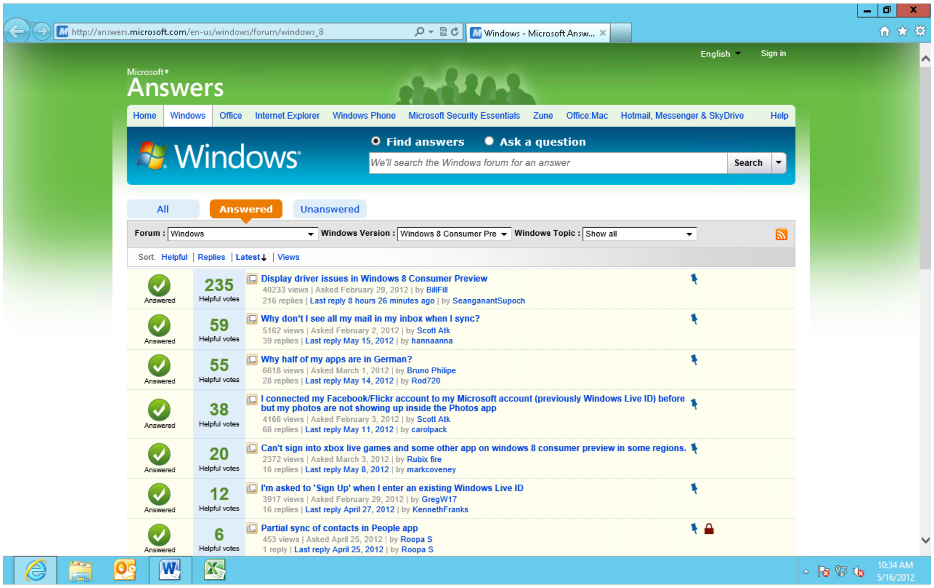
The Microsoft Answers website is a community site in which other users hang out, ask questions, and answer questions in various *forums* (topic areas). Nobody gets paid to work on the community site. It's all done on a volunteer basis so there's no charge to access the site.

The Microsoft Answers site doesn't provide instant gratification. No one is standing by waiting for your questions and ready to answer on the spot. It's more like a newsgroup: People post messages, and other people reply at their convenience. This is another option that you can add to your list of resources when you're looking for information.

The easiest way to get to the Microsoft Answers site is to open Internet Explorer and navigate to `http://answers.microsoft.com`. To get to the site from Windows, first make sure that your computer is online. Then, open Windows Help And Support as explained previously and click the Microsoft Answers Website link. Your web browser opens to the home page for the Windows forums. We can't say exactly how it will look because it's a web page, and web pages change all the time. But you should see a Search box and some basic instructions, as shown in Figure 7.7.

FIGURE 7.7

Home page for online communities


http://answers.microsoft.com/en-us/windows/forum/windows_8
Windows - Microsoft Answ...
English
Sign in
Microsoft®
Answers
Home
Windows
Office
Internet Explorer
Windows Phone
Microsoft Security Essentials
Zune
Office:Mac
Hotmail, Messenger & SkyDrive
Help
Windows
Find answers
Ask a question
We'll search the Windows forum for an answer
Search
All
Answered
Unanswered
Sort: Helpful | Replies | Latest | Views
10:34 AM
5/16/2012

Forum : Windows
Windows Version : Windows 8 Consumer Pre
Windows Topic : Show all

Answered 235 Helpful votes
Display driver issues in Windows 8 Consumer Preview
40233 views | Asked February 29, 2012 | by BillFill
216 replies | Last reply 8 hours 26 minutes ago | by SeanganantSupoch

Answered 59 Helpful votes
Why don't I see all my mail in my inbox when I sync?
5162 views | Asked February 2, 2012 | by Scott Atk
39 replies | Last reply May 15, 2012 | by hannaanna

Answered 55 Helpful votes
Why half of my apps are in German?
6618 views | Asked March 1, 2012 | by Bruno Philipe
28 replies | Last reply May 14, 2012 | by Rod720

Answered 38 Helpful votes
I connected my Facebook/Flickr account to my Microsoft account (previously Windows Live ID) before but my photos are not showing up inside the Photos app
4166 views | Asked February 3, 2012 | by Scott Atk
68 replies | Last reply May 11, 2012 | by carolpack

Answered 20 Helpful votes
Can't sign into xbox live games and some other app on windows 8 consumer preview in some regions.
2372 views | Asked March 3, 2012 | by Rubix fire
16 replies | Last reply May 8, 2012 | by markcoveney

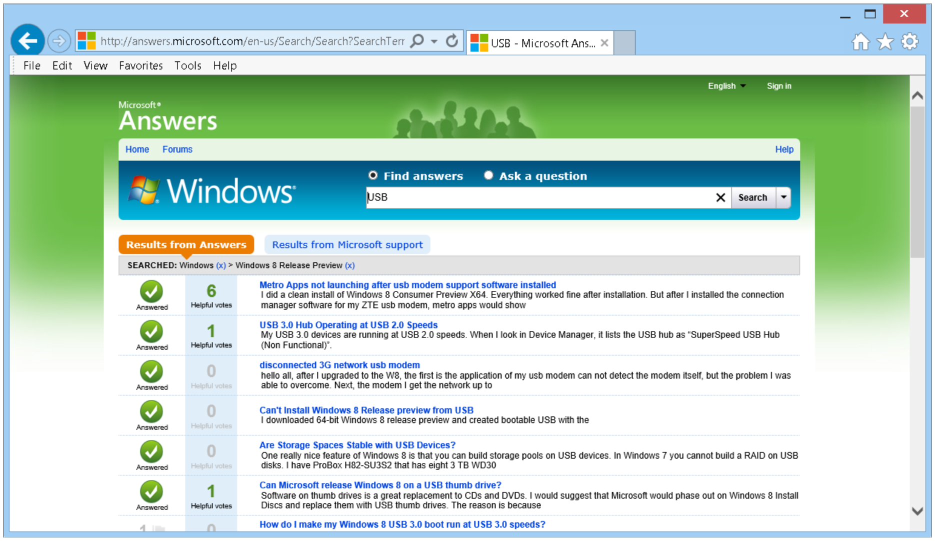
Answered 12 Helpful votes
I'm asked to 'Sign Up' when I enter an existing Windows Live ID
3917 views | Asked February 29, 2012 | by GregW17
16 replies | Last reply April 27, 2012 | by KennethFranks

Answered 6 Helpful votes
Partial sync of contacts in People app
453 views | Asked April 25, 2012 | by Roopa S
1 reply | Last reply April 25, 2012 | by Roopa S

It's important to understand that when you type something in the Search box and click Search (with the Find Answers options selected), what you get is a list of all the previous newsgroup posts that contain the word or phrase for which you searched, similar to the example in Figure 7.8.

FIGURE 7.8

Results of search for Windows 8 requirements



SEARCHED: Windows (x) > Windows 8 Release Preview (x)

✓ Answered	6 Helpful votes	**Metro Apps not launching after usb modem support software installed** I did a clean install of Windows 8 Consumer Preview X64. Everything worked fine after installation. But after I installed the connection manager software for my ZTE usb modem, metro apps would show
✓ Answered	1 Helpful votes	**USB 3.0 Hub Operating at USB 2.0 Speeds** My USB 3.0 devices are running at USB 2.0 speeds. When I look in Device Manager, it lists the USB hub as “SuperSpeed USB Hub (Non Functional)”.
✓ Answered	0 Helpful votes	**disconnected 3G network usb modem** hello all, after I upgraded to the W8, the first is the application of my usb modem can not detect the modem itself, but the problem I was able to overcome. Next, the modem I get the network up to
✓ Answered	0 Helpful votes	**Can't Install Windows 8 Release preview from USB** I downloaded 64-bit Windows 8 release preview and created bootable USB with the
✓ Answered	0 Helpful votes	**Are Storage Spaces Stable with USB Devices?** One really nice feature of Windows 8 is that you can build storage pools on USB devices. In Windows 7 you cannot build a RAID on USB disks. I have ProBox H82-SU3S2 that has eight 3 TB WD30
✓ Answered	1 Helpful votes	**Can Microsoft release Windows 8 on a USB thumb drive?** Software on thumb drives is a great replacement to CDs and DVDs. I would suggest that Microsoft would phase out on Windows 8 Install Discs and replace them with USB thumb drives. The reason is because
1	0	**How do I make my Windows 8 USB 3.0 boot run at USB 3.0 speeds?**

The idea is to scroll through all the messages to see whether one looks as though it might help. Then click its message header (the text in bold) to expand the thread. A *thread* consists of the original message and all the replies to that message. To read any message in the thread, click its header in the left pane. The message text appears in the right pane.

TIP

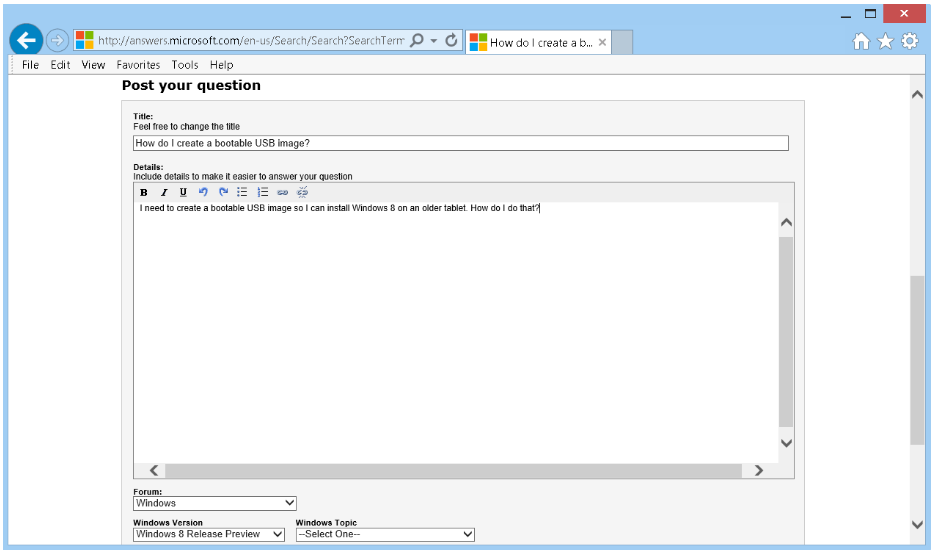
The Microsoft Answers site returns two types of results. The Results From Answers tab lists the search results from forum postings that match your query. The Results From Microsoft Support tab lists search results from Microsoft Support articles and resources that match your search query. So, if you don't see what you're looking for in the Results from Answers tab, click the Results From Microsoft Support tab to see if the answer to your question is there.

To post your own question to a group, you need to set up an account. Don't worry; you don't have to give up any personal information. Nor will there ever be a charge. You need to set up the account only once, not every time you use the newsgroups.

To post a question start by clicking Ask A Question. If you haven't set up an account yet, you'll be given the opportunity to do so on the next page that opens. Otherwise, if you already have set up an account, you can sign in by entering your username and password. After you do so, you'll be able to create a new post, as shown in Figure 7.9.

FIGURE 7.9

Post a question.


http://answers.microsoft.com/en-us/Search/Search?SearchTerm
How do I create a b...
File Edit View Favorites Tools Help
B I U

Post your question

Title:
Feel free to change the title
How do I create a bootable USB image?

Details:
Include details to make it easier to answer your question
I need to create a bootable USB image so I can install Windows 8 on an older tablet. How do I do that?

Forum:
Windows

Windows Version
Windows 8 Release Preview

Windows Topic
--Select One--

Microsoft customer support

Clicking the Contact Support link in Windows Help And Support takes you to a web page that provides still more support options. There, you'll find a ton of links to different kinds of support for different kinds of questions. Take a look at all your options and decide what's best for you.

Troubleshooting

Troubleshooting computer problems isn't always easy; it involves a host of skills that take a lot of time, education, and experience to build. But you can use some resources to troubleshoot some of the more common problems without being a total computer geek.

First, it's important to understand that troubleshooting comes into play only when you already know how to do something but it's not working as it should. This is not the same as *not* knowing how to do something, or not being able to figure out how to do something by guessing. It's an important distinction to make because if you can't do something because you don't know how, troubleshooting won't help.

As for non-technical troubleshooting, there are many resources for that. The first is Windows 8's automated troubleshooting. Windows 8 can often recognize when something has gone wrong. When it does, a message may pop up asking whether it's okay to send information about the problem to Microsoft. You should always choose Yes. No human will receive the message. Nobody will call or pop up on your screen to solve the problem. Instead, another computer will check to see whether it's a known problem that has already been solved.

If a solution is available, you'll (eventually) see a message in your Notification area offering to solve the problem. Just click that message and follow any additional instructions that appear on the screen. If you're lucky, the problem will go away without your having to call for technical support.

You can also use the Troubleshooting link in the Control Panel to access the troubleshooting tools. Click that link to find solutions to common problems.

We have also included a troubleshooting chapter at the end of each part of this book where appropriate. As with the troubleshooting you get through the Help And Support Center, these chapters cover only some of the more common problems. There isn't a book in the world that's large enough to cover every possibility.

Finally, support communities can be a great resource. Just make sure that you explain exactly what the problem is so that people reading your post can determine what's happening. Chances are, someone who reads your message has already encountered that problem and will offer a solution. It's free, so it's certainly worth a try.

Wrap-Up

Finding the information you need, when you need it, is a big part of using a computer these days. A single resource, such as a book, a computer course, the built-in Help, communities, the web, and so on isn't really enough. The field is much too big now. To survive in the digital world, you need access to many resources. This chapter has touched on the different resources available to you. To summarize:

- Windows Help And Support is one of your best resources for information about Windows 8.
- There are three ways to get to help, which you surely want to memorize: Press the Help key (F1) on your keyboard, click a Help button (blue circle with question mark), or open the Start screen and type **Help** to access Help And Support from the Search screen.
- Most programs that aren't built into Windows 8 have their own help. To get to that help, you typically press the Help key (F1) or choose Help from that program's menu bar.
- If pressing the F1 key has no effect, tap the F Lock (or Function Lock) key on your keyboard and then press the F1 key again.
- Windows communities provide a resource for free help from live human beings.
- You need to invest a little time in learning to use the communities. They don't provide instant gratification, but the time you spend will be well worth it.

CHAPTER
8

Troubleshooting Startup Problems

IN THIS CHAPTER

- The computer won't start
- The computer takes too long to start
- Resources for troubleshooting startup problems
- When programs won't start

Each major part in this book ends with a troubleshooting chapter like this one. The troubleshooting chapters provide quick solutions to common problems. That's about it. You won't catch us yammering on for paragraph after paragraph in these troubleshooting chapters!

The Computer Won't Start

If the computer does absolutely nothing when you first turn it on, your first move is to check all cable connections. Make sure the power plug on every device that plugs into the wall is firmly plugged in. Also, make sure the mouse, keyboard, and all other devices are firmly plugged into their slots.

If it's a desktop computer, look for a 0/1 power switch on the back of the computer and make sure it's on (flipped to the 1 position).

If it's a laptop computer or tablet device, make sure your battery is connected correctly. You might also ensure that the AC adapter is plugged in on your device.

Turn on the computer again and, as it is powering up, push the button on the floppy disk drive (if the computer has one) and the CD or DVD drive. If there is a disk in either drive, remove it.

If the computer sounds as though it's starting up but you don't see anything on the screen, make sure all plugs to the monitor are firmly seated. If it's a desktop computer, make sure the monitor's power cable is firmly attached to the monitor and wall socket, and that the cable connecting the computer to the monitor is firmly attached at both ends of the cable. Make sure the monitor is turned on. Then restart the computer.

Non-system disk or disk error message

This type of message appears when the computer attempts to boot from a disk on which Windows is not installed. If a floppy disk is in the floppy drive (there are still computers that have floppy disk drives), remove it. Likewise for any disk in the CD drive or DVD drive, or any drive that's connected to the computer through a USB port. Press any key to continue startup. If that doesn't work, press Ctrl+Alt+Del or restart the computer with the main on/off switch.

Computer starts but mouse and keyboard don't work

If the computer starts but doesn't respond to the mouse and keyboard, turn off the computer. Unplug both the mouse and keyboard from the computer. For USB mice and keyboards, unplug each and re-connect them. Ensure each USB connection is tight and secure. If the plug is round and green, make sure you plug it into the PS/2 port for the mouse (usually colored green). Make sure nothing is resting on the keyboard and holding down a key. Then firmly plug in the keyboard. If the plug is round and purple, plug it into the PS/2 port for the keyboard. Check *all* cable connections to the computer one more time. Then restart the computer.

Computer keeps trying to start but never gets there

Get to Safe Mode by pressing Shift+F8 during the boot process and choose the option to disable automatic restart. If that doesn't help, get to the Safe Mode options again and try the Last Known Good Configuration option. See this chapter on troubleshooting startup problems.

Screen turns blue during startup and then stops

This is commonly referred to as the Blue Screen of Death (BSOD). It doesn't mean your computer is permanently broken. A frequent cause of this problem is a device driver for a hardware device that doesn't work with Windows 8. If you recently connected or installed a new hardware device, disconnect or uninstall it. Then start the computer again. That's your best bet.

If you still get the Blue Screen of Death, you'll likely have to boot to Safe Mode and disable the device through Device Manager. This is not the sort of thing the average user normally does. This is more the kind of thing that a professional handles. But if you want to take a shot at fixing it yourself, see this chapter and Chapter 47.

If the error persists, look for an error number on the Blue Screen of Death page. It will most likely start with the characters 0x. Jot that number down on a sheet of paper. Then, if you can get online through another computer, go to Microsoft's site (`http://search.microsoft.com`) or your favorite online search site (such as Google or Bing) and search for that number. You might find a page that offers an exact solution to that problem.

If you can get online through another computer, you might also consider posting a question at the Windows Communities site. Be sure to include the error number in your post. You might find someone who has already experienced and solved that very problem.

Computer Takes Too Long to Start

On most systems, Windows 8 is optimized to decrease boot time from many seconds (or minutes) to just a handful of seconds. For example, a laptop might take approximately 35 seconds to boot to Windows 7. With Windows 8, the boot time is only eight seconds. You may or may not see that large of a decrease in wait time, but you should pay attention if the boot time takes longer and longer each time you start your computer.

When the computer takes much longer to start than it used to, the problem is usually caused by too many programs trying to auto-start. Consider uninstalling any programs you don't really use, as discussed in Chapter 40. For the remaining programs, use Windows Defender to prevent unnecessary programs from starting automatically (see Chapter 10 for more information. For more information on controlling auto-start programs, read Chapter 15).

Many things that prevent a computer from starting have nothing to do with Windows 8. It often takes even seasoned pros many hours to diagnose and repair startup problems. But before you resort to the repair shop, here are some other things you can try.

Restore system files to an earlier time

If you can get the computer to start in Safe Mode, try restoring your files to an earlier time. In Safe Mode, click the Start button, type **Restore**, and then click System Restore on the Start menu. Follow the onscreen instructions to restore system files from a date prior to when the problem began. Choose the most recent date. For example, if the problem started today, restore files from yesterday or the day before.

Windows 8 Automatic Repair Mode

If you press F8 during boot up, or if Windows 8 automatically detects an issue with your startup, you see a light blue window (not the Blue Screen of Death) that says "Automatic Repair." This is Windows 8's Automatic Repair Mode. The screen informs you that Windows could not start properly and that a System Restore point can be used to attempt to repair the issue. Chapter 31 discusses the System Restore process and how you should consider keeping this feature activated for situations like the one you are experiencing.

System Restore turns back the clock to a previous setup when Windows was working correctly. During the System Restore process, you do not lose any personal data that you added to the system. Instead, programs and apps that were installed after the latest System Restore point and time are uninstalled from your computer. The assumption is that a program or app may have damaged your computer to the point that it will not boot. By removing the programs and apps, Windows may be able to start properly.

If you decide to choose to restore, the process cannot be undone. You have the option of canceling, but you must do it from this initial screen; don't try to cancel after you start the restore process. If you decide to cancel, click the Cancel button now.

To continue, click the Restore button and work through the onscreen prompts.

Repair Windows 8 Install

If you have the DVD with Windows 8 on it, you can boot from that disc and do a repair installation. Put that disc in the DVD drive and start the computer. Watch the screen for the message "Press Any Key To Boot From CD Or DVD" (or a similar message); then, press Enter or the Spacebar.

If the option to boot from the CD or DVD never appears, and the computer won't boot from that disc, you need to change your BIOS options to boot from the CD/DVD drive. How you do that varies from one computer to the next. Typically, you start the computer and then immediately start pressing the F1, F2, or Del key (perhaps all three, if you don't know which is required) repeatedly as the computer is starting. This should take you to the BIOS Setup options where you can configure the computer to try booting from the CD/DVD before it tries booting from the hard drive. Close and save the new settings. The computer will restart, and this time you should be able to boot from the Windows DVD.

If you're able to boot from the DVD, the first screen you see will likely ask about your language and locale. Make any necessary changes and click Next. On the next page, click Repair Your Computer (not the Install Now option). Then just follow the onscreen instructions to do a repair install of Windows 8.

Advanced startup

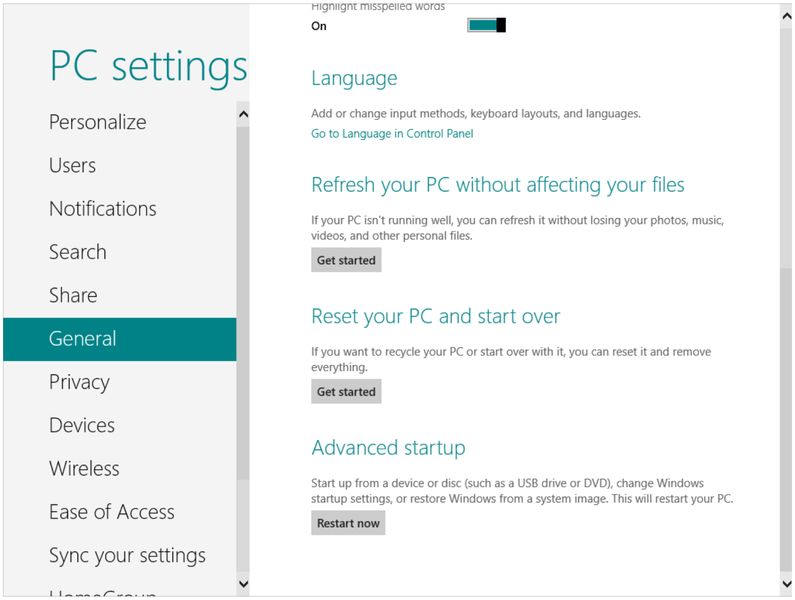
If you can boot into Windows 8, but are having issues with the boot process, consider using Windows 8's Advanced Startup tool. This tool does assume you can boot into Windows and navigate to the PC Settings area.

To use this tool, perform the following steps:

1. Display the Charms Bar and choose Settings.
2. Click Change PC Settings.
3. Click the General item.
4. Scroll to the last item on the page, as shown in Figure 8.1.

FIGURE 8.1

Advanced startup option in the General PC Settings


PC settings
Personalize
Users
Notifications
Search
Share
General
Privacy
Devices
Wireless
Ease of Access
Sync your settings
HomeGroup
Get started
Get started
Restart now

Highlight misspelled words
On

Language

Add or change input methods, keyboard layouts, and languages.
Go to Language in Control Panel

Refresh your PC without affecting your files

If your PC isn't running well, you can refresh it without losing your photos, music, videos, and other personal files.

Reset your PC and start over

If you want to recycle your PC or start over with it, you can reset it and remove everything.

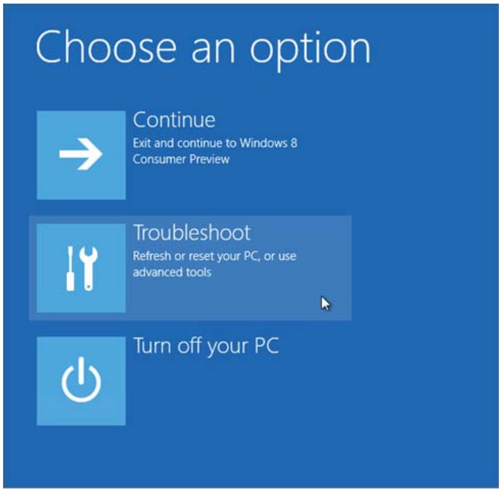
Advanced startup

Start up from a device or disc (such as a USB drive or DVD), change Windows startup settings, or restore Windows from a system image. This will restart your PC.

5. Click the Restart Now button. Windows displays a screen similar to the one in Figure 8.2.

FIGURE 8.2

Troubleshoot startup problems


Choose an option
Continue
Troubleshoot
Turn off your PC

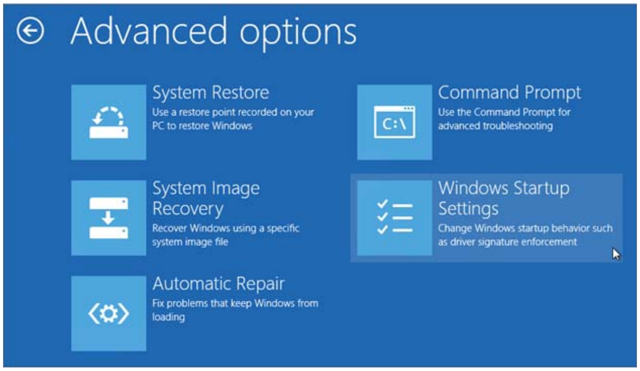
Exit and continue to Windows 8 Consumer Preview

Refresh or reset your PC, or use advanced tools

6. Click Troubleshoot.
7. Click one of three options and work through the onscreen prompts:
   - **Refresh Your PC:** Use this option to refresh your copy of Windows but not to destroy any of your files. This is similar to the Automatic Repair Mode discussed previously in this chapter. This is a good option as you do not lose your file and you get a "fresh" version of Windows.
   - **Reset Your PC:** Use this option to completely remove all files (including files you have created) and to reinstall Windows 8. This will destroy all files you have created or saved to the computer. You should not use this option until you have made a backup of your critical files and you should use it only as a last resort — when all other troubleshooting tasks fail.
   - **Advanced Options:** Provides several additional tools for fixing startup problems, as shown in Figure 8.3. Chapter 15 covers these tools in more detail.

FIGURE 8.3

Advanced options for troubleshooting startup problems



Advanced options

System Restore
Use a restore point recorded on your PC to restore Windows

Command Prompt
Use the Command Prompt for advanced troubleshooting

System Image Recovery
Recover Windows using a specific system image file

Windows Startup Settings
Change Windows startup behavior such as driver signature enforcement

Automatic Repair
Fix problems that keep Windows from loading

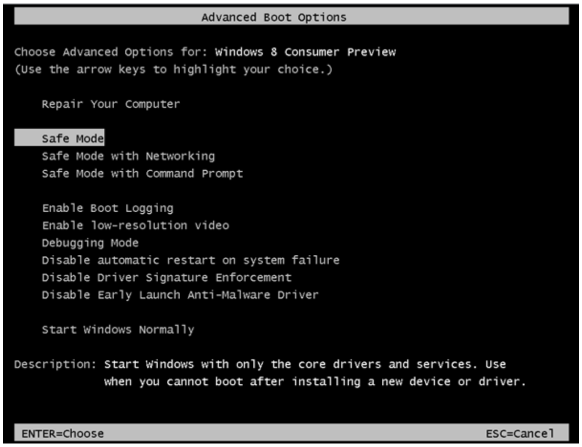
Start in Safe Mode

For many experienced Windows users who have dealt with faulty Windows startups, Safe Mode has become a close friend. Safe Mode offers a way to start Windows in a bare-bones setup. That is, Windows starts with just enough system files, programs, and services to allow it to run so you can diagnose issues, remove programs, and perform other tasks that can be done only at the graphic user interface level.

Typically, to access Safe Mode, you press F8 during the Windows boot process. If you do that now, you enter the Automatic Repair Mode. To enter Safe Mode in Windows 8, you must press Shift+F8 during the boot process. Figure 8.4 shows the options you can choose to start Windows and to diagnose and/or repair Windows. Figure 8.5 shows the Safe Mode Windows desktop. Although this looks like a normal version of Windows, many programs and features do not work. It is simply a place where you can modify system settings, such as those for Device Manager, MSCONFIG, the Windows Registry, Control Panel applets, and the like. You cannot, for example, start some Windows 8 apps or other programs.

FIGURE 8.4

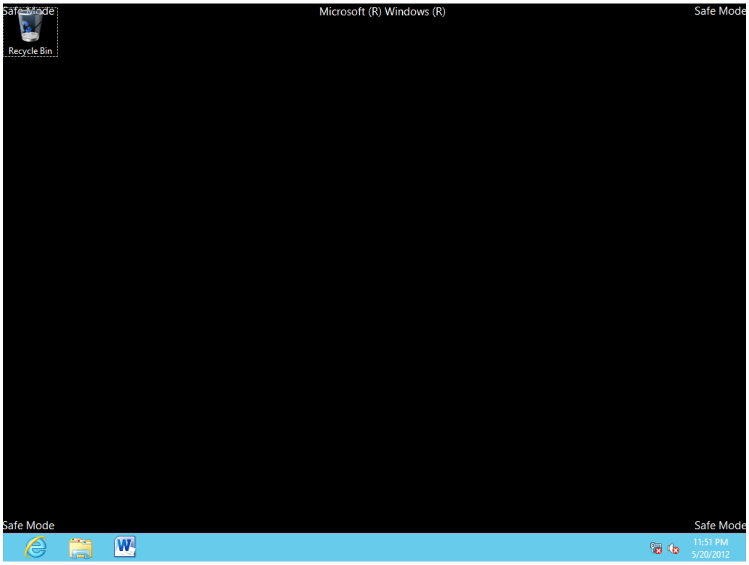
Windows 8 Safe Mode options



```
                         Advanced Boot Options

Choose Advanced Options for: Windows 8 Consumer Preview
(Use the arrow keys to highlight your choice.)

    Repair Your Computer

    Safe Mode
    Safe Mode with Networking
    Safe Mode with Command Prompt

    Enable Boot Logging
    Enable low-resolution video
    Debugging Mode
    Disable automatic restart on system failure
    Disable Driver Signature Enforcement
    Disable Early Launch Anti-Malware Driver

    Start Windows Normally

Description: Start Windows with only the core drivers and services. Use
             when you cannot boot after installing a new device or driver.


ENTER=Choose                                                   ESC=Cancel
```

FIGURE 8.5

Windows 8 Safe Mode desktop view

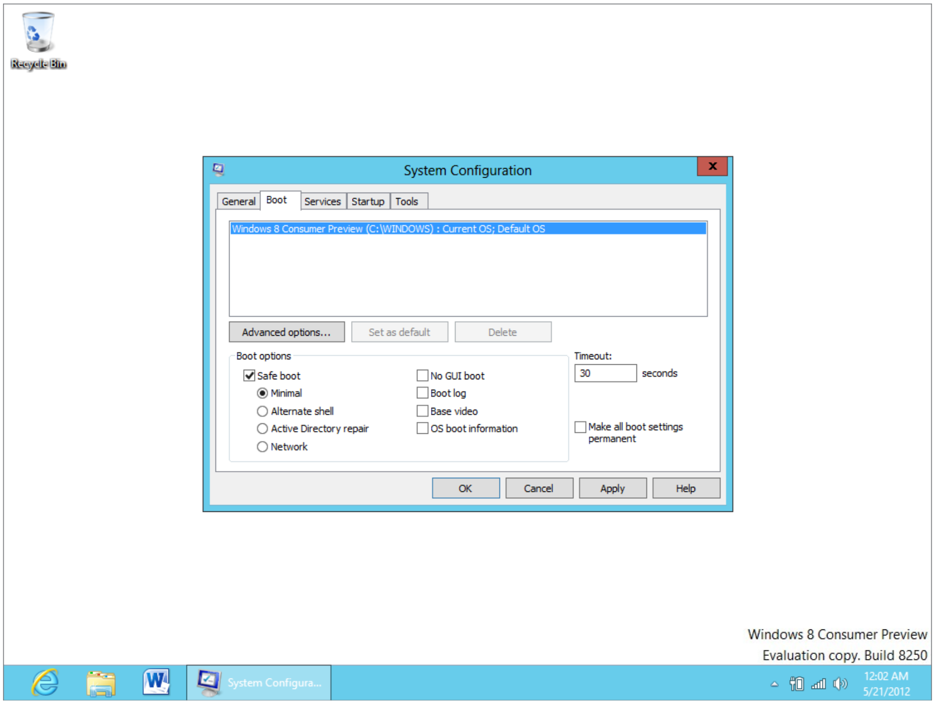


After you finish repairing Windows, shut down Safe Mode and restart in normally.

Another way to boot into Safe Mode is to set Windows to do it automatically. To do this, press Windows+X and choose Run. Type **MSCONFIG** in the Open dialog box and click OK. The System Configuration dialog box appears. (See Figure 8.6.)

FIGURE 8.6

Windows 8 Safe Mode desktop view


System Configuration

Windows 8 Consumer Preview (C:\WINDOWS) : Current OS; Default OS

Boot options

☑ Safe boot

● Minimal

○ Alternate shell

○ Active Directory repair

○ Network

☐ No GUI boot

☐ Boot log

☐ Base video

☐ OS boot information

Timeout: 30 seconds

☐ Make all boot settings permanent

Recycle Bin
General
Boot
Services
Startup
Tools
Advanced options...
Set as default
Delete
OK
Cancel
Apply
Help
Windows 8 Consumer Preview
Evaluation copy. Build 8250
System Configura...
12:02 AM
5/21/2012

Click the Boot tab and select the Safe Boot option. Click Apply and then OK. You are prompted with a dialog box that has Restart or Exit Without Restart buttons. Click Restart so that Windows reboots. When it restarts, you are in Safe Mode, as shown in Figure 8.5. Use Safe Mode to diagnose or repair Windows.

When you want to leave Safe Mode, you need to undo the Safe Boot option in the System Configuration tool. To do that, press Windows+X, choose Run, and enter **MSCONFIG**. On the Boot tab of the System Configuration dialog box, clear the Safe Boot option and click Apply and then OK. Click Restart to shut down and restart Windows into its normal view.

The instruction manual that came with your computer

Most computer manufacturers provide some means of helping you troubleshoot and repair startup problems. Be sure to look through whatever documentation you have for your computer manufacturer's recommendations. That could be your best bet because all computers are unique in some ways. The manual that came with your computer provides information that's specific to your exact make and model of computer.

Resources in this book

We've thrown a lot of technical terms and concepts at you in this chapter. But when it comes to solving startup problems, there's no way around that. Here are some additional resources within this book that might help you solve a startup problem:

- **Using Safe Mode:** The "Troubleshooting Startup" section in Chapter 15 provides additional Safe Mode information on starting your computer from Safe Mode. If you can get to Safe Mode, techniques described in the chapters referenced in this list might help you solve the problems.
- **Restore from a Complete PC image:** If you've backed up your entire hard disk using File History, see Chapter 31 for information on restoring from that backup.
- **Restore to an earlier time:** For information on restoring your computer to an earlier time, see "Using System Protection" in Chapter 31.
- **Removing programs:** If you think a faulty program might be preventing your computer from starting, you can uninstall the program using techniques described in Chapter 40 (assuming that you can get to Safe Mode so that you have access to that program).
- **Removing hardware:** When faulty hardware or drivers are preventing Windows 8 from starting, techniques described under "Removing Hardware" in Chapter 44 might help.
- **Troubleshooting hardware:** Startup problems are often hardware problems. See Chapter 48 for more information on troubleshooting hardware.

Resources in Windows Help

If you can start the computer in Safe Mode, you can get to Windows Help, too. In fact, the Help window should open automatically as soon as you enter Safe Mode. If it doesn't, click the Start button and choose Help and Support. Then search using the keywords "Safe Mode" for additional information on using Safe Mode to troubleshoot startup options.

Online resources

If you can start in Safe Mode with Networking, you can access online resources. You might try searching Windows Communities (which you can get to from Windows Help) for words related to the startup problem you're having, or you can post a question describing the problem in as much detail as possible.

You can also search Microsoft's website for words that describe the problem you're having. Be sure to include the number 8 in your search. Otherwise, the search result will likely include other irrelevant Microsoft products. Starting your search from `http://search.microsoft.com` or `http://support.microsoft.com` will help limit the search to Microsoft, rather than include the entire web. If that doesn't help, you can try searching the entire web from `www.bing.com`, `www.google.com`, or whatever search engine you prefer. If you're not a technical person, don't expect it to be easy. As we said, startup problems can be difficult to troubleshoot, even for the pros. If all else fails, you may have to take the system to a repair shop to get the problem resolved. Or call a mobile service that will send a computer geek to your home or office.

Programs Won't Start

If a favorite old program won't start, it's most likely an incompatibility issue. Try right-clicking the startup icon for the program and choosing Run As Administrator. If that doesn't help, try the program compatibility features. See Chapter 39 for more information on getting older programs to run with Windows 8.

Wrap-Up

This chapter discussed ways to troubleshoot your computer when you are experiencing problems. Some fixes to problems are easy, while others may require you to reinstall Windows 8. The following topics are covered in this chapter:

- The computer won't start.
- The computer takes too long to start.
- Resources for troubleshooting startup problems.

Part III

Personalizing Windows 8

IN THIS PART

Chapter 9
Protecting Yourself with Windows Firewall

Chapter 10
Conquering Malicious Software

Chapter 11
Automatic Updates as Security

Chapter 12
Personalizing the Windows 8 Interface

Chapter 13
Personalizing the Desktop

Chapter 14
Transferring Files from Another Computer

Chapter 15
Customizing Startup Options

Chapter 16
Troubleshooting Customization Problems

CHAPTER 9

Protecting Yourself with Windows Firewall

IN THIS CHAPTER

Understanding how firewalls protect your computer

Using Security Center

Using Windows Firewall

Configuring Windows Firewall

If you use the Internet, a firewall is a must-have security tool. It's not the only tool you need, but it's an important one. It protects your computer from hackers and worms. Hackers are people that would attempt to access your computer through the Internet without your knowing it. Worms are bad programs, such as viruses, that are usually written to do intentional harm.

Windows 8 comes with its own built-in firewall. If you didn't know about it before going online, relax. It's enabled by default. So most likely it's been protecting you since the very first moment you went online (also your Internet Service Provider protects you from most invasions). In this chapter, you learn how the firewall works and how to configure it for maximum protection.

How Firewalls Work

To understand what a firewall is, you need to first understand what a network connection is. Even though you have only one skinny set of wires connecting your computer to the Internet (through a DSL phone line or cable outlet), that connection actually consists of 65,535 *ports*. Each port can simultaneously carry on its own conversation with the outside world. So, theoretically, you could have 65,535 things going on at a time. Of course, nobody ever has that much going on all at one time. A handful of ports is more like it.

The ports are divided into two categories:

- **TCP (Transmission Control Protocol):** This is generally used to send text and pictures (web pages and e-mail), and includes some error checking to make sure all the information that's received by a computer matches what the sending computer sent.

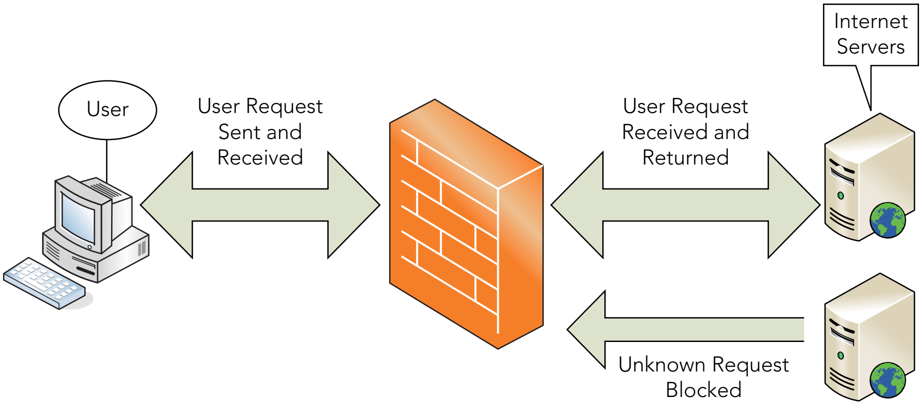
- **UDP (User Datagram Protocol):** This works more like broadcast TV or radio, where the information is just sent out and there is no error checking. UDP is generally used for real-time communications, such as voice conversations and radio broadcasts sent over the Internet.

Each port has two directions: incoming (or *ingress*) and outgoing (or *egress*). The direction is in relation to stuff coming into your computer from the outside: namely the Internet. It's the stuff coming into your computer that you have to watch out for. But you can't close all ports to all incoming traffic. If you did, there'd be no way to get the good stuff in. But you don't want to let everything in, either. You need a way to separate the wheat from the chaff, so to speak.

Anti-spyware and antivirus software are good tools for keeping out viruses and other bad things that are attached to files coming into your computer. But hackers can actually sneak worms and other bad things in through unprotected ports without involving a file in the process. That's where the firewall comes into play. A *stateful* firewall, such as the one that comes with Windows 8, keeps track of everything you request. When traffic from the Internet wants to come in through a port, the firewall checks to make sure the traffic is something you requested. If it isn't, the firewall assumes this is a hacker trying to sneak something in without your knowing it, and therefore prevents the traffic from entering your computer. Figure 9.1 illustrates how it works.

FIGURE 9.1

A stateful firewall


Internet Servers
User
User Request Sent and Received
User Request Received and Returned
Unknown Request Blocked

So, there's really more to it than just having a port open or closed. It's also about *filtering* — about making sure that data coming into an open port is something you requested and not some rogue uninvited traffic sent by some hacker. Many of the worms that infected so many computers in the 1990s did so by sneaking in undetected through unfiltered ports. These days, you really want to make sure you have a firewall up whenever you go online to prevent such things.

What a Firewall Doesn't Protect Against

It's important to understand that a firewall alone is not sufficient protection against all Internet threats. A firewall is just one component in a larger defense system. Specifically:

- Windows Firewall *doesn't* protect you from spyware and viruses. See Chapter 10 for more information on that protection.
- Windows Firewall *doesn't* protect you from attacks based on exploits. Automatic updates (see Chapter 11) provide that protection.
- A firewall *doesn't* protect you from pop-up ads.
- A firewall *doesn't* protect you from phishing scams.
- Windows Firewall *doesn't* protect you from spam (junk e-mail).

So, a firewall isn't a complete solution. Rather, it's an important component of a larger security strategy.

NOTE

Note that in the preceding list, we indicated that Windows Firewall doesn't provide certain types of protection, such as spam or virus blocking. Many hardware firewalls *do* provide this type of protection. This is sometimes referred to as *perimeter protection* because it protects your network from threats at the perimeter of your network. These types of firewalls can cost from several hundred to several thousands of dollars, so they aren't always the best bet for a home network. They can be extremely valuable, however, for business networks.

Introducing Action Center

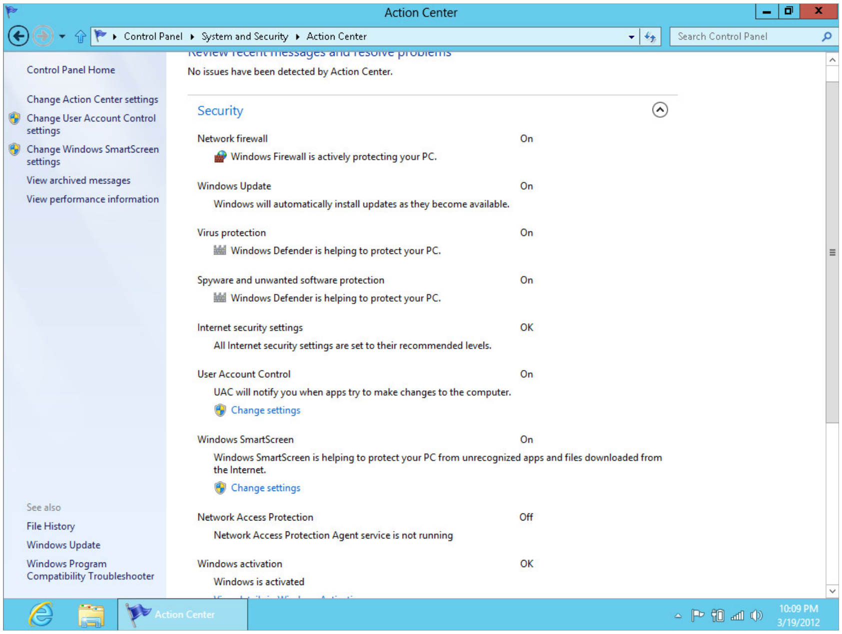
Before you explore Windows Firewall, take a look at the Action Center. This is a single point of notification for most of your PC's security. You can open the Action Center in several ways. Use whichever is most convenient for you:

- From the Windows Start screen, show the Charms Bar and click Search. Click Control Panel, click System And Security, and then click Action Center.
- On the desktop, right-click the flag icon in the Notification area and choose Open Action Center.
- On the desktop, press Windows+X, choose Control Panel, click System And Security, and then click Action Center.

Whichever method you use, the Action Center opens. Figure 9.2 shows an example. We clicked the arrow button to the right of each heading so that you can see the descriptive text under each heading. You can click that button to show or hide the same descriptive text.

FIGURE 9.2

Action Center


Action Center
Control Panel ▸ System and Security ▸ Action Center
Search Control Panel
Control Panel Home
Change Action Center settings
Change User Account Control settings
Change Windows SmartScreen settings
View archived messages
View performance information
See also
File History
Windows Update
Windows Program Compatibility Troubleshooter
Action Center
10:09 PM
3/19/2012

Review recent messages and resolve problems

No issues have been detected by Action Center.

Security

Network firewall On
Windows Firewall is actively protecting your PC.

Windows Update On
Windows will automatically install updates as they become available.

Virus protection On
Windows Defender is helping to protect your PC.

Spyware and unwanted software protection On
Windows Defender is helping to protect your PC.

Internet security settings OK
All Internet security settings are set to their recommended levels.

User Account Control On
UAC will notify you when apps try to make changes to the computer.
Change settings

Windows SmartScreen On
Windows SmartScreen is helping to protect your PC from unrecognized apps and files downloaded from the Internet.
Change settings

Network Access Protection Off
Network Access Protection Agent service is not running

Windows activation OK
Windows is activated

How you know Windows Firewall is On

By default, Windows Firewall is turned on and working at all times, so your Action Center should show "On" beside the Firewall item, as in Figure 9.2 (and you will see only the Network Firewall item in Action Center if you click the arrow beside the Security heading). If your version of Figure 9.2 shows Off or Not Monitored, you may have a third-party firewall program running in place of Windows Firewall. Many such programs are available, such as McAfee, Symantec, and Check Point. If your firewall is turned off and you don't know why, it would be good to find out the reason — perhaps from your computer manufacturer or a support person who worked on your computer. If you don't have any firewall up, you should definitely turn on Windows Firewall.

NOTE

There is no advantage to having two or more firewalls running simultaneously. In fact, more than one firewall is likely to cause unnecessary problems.

Turning Windows Firewall on or off

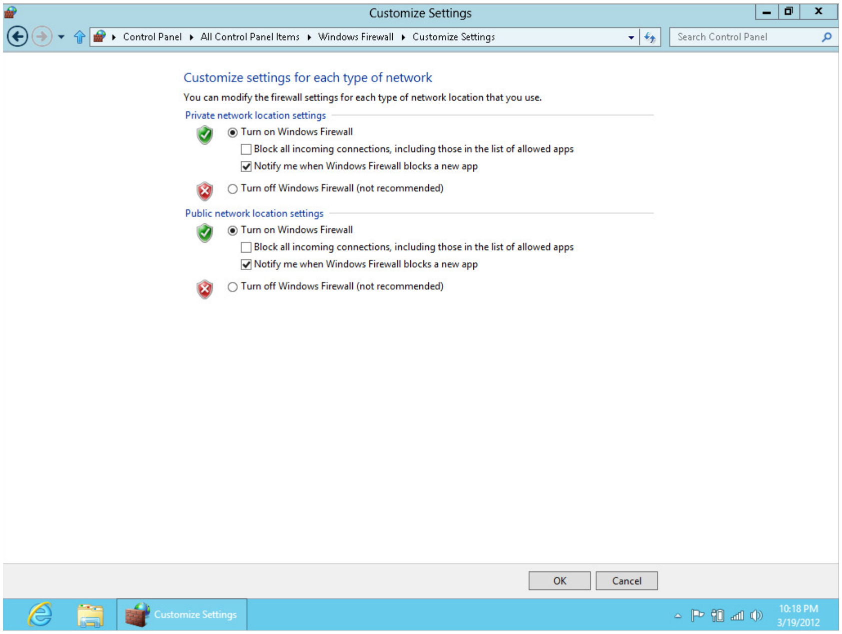
To turn Windows Firewall on or off, you must have administrative privileges. In the System And Security Control Panel window, click Windows Firewall. You should see the current firewall status in the right pane, and options for controlling the firewall in the left pane. Click Change Notification Settings or Turn Windows Firewall On or Off in the left pane to see the options shown in the foreground of Figure 9.3.

TIP

Use the Block All Incoming Connections check box only to temporarily disable exceptions when connecting to public Wi-Fi networks. You can find more on that topic in the sections that follow.

FIGURE 9.3

Settings for Windows Firewall


Customize Settings
Control Panel ▸ All Control Panel Items ▸ Windows Firewall ▸ Customize Settings
Search Control Panel

Customize settings for each type of network

You can modify the firewall settings for each type of network location that you use.

Private network location settings

● Turn on Windows Firewall

☐ Block all incoming connections, including those in the list of allowed apps

☑ Notify me when Windows Firewall blocks a new app

○ Turn off Windows Firewall (not recommended)

Public network location settings

● Turn on Windows Firewall

☐ Block all incoming connections, including those in the list of allowed apps

☑ Notify me when Windows Firewall blocks a new app

○ Turn off Windows Firewall (not recommended)

If you have a third-party firewall that you feel is more secure than the Windows Firewall, you can choose the Off option to turn off Windows Firewall. Just make sure you have a firewall up when you go online. Otherwise, you won't have anything to stop uninvited traffic on your network connection after the traffic gets by your Internet Service Provider.

TIP

If you have a firewall at home, such as a wireless access point (WAP) or a cable or DSL modem that provides firewall features, and those features are turned on, you can safely turn off Windows Firewall. However, there usually is no downside to leaving Windows Firewall turned on even when an upstream firewall is in place. The exception is when you are trying to play multiplayer games or accomplish networking with other computers on the network and can't get the ports right in Windows Firewall to make it work. In these situations, just turn off Windows Firewall on the computers.

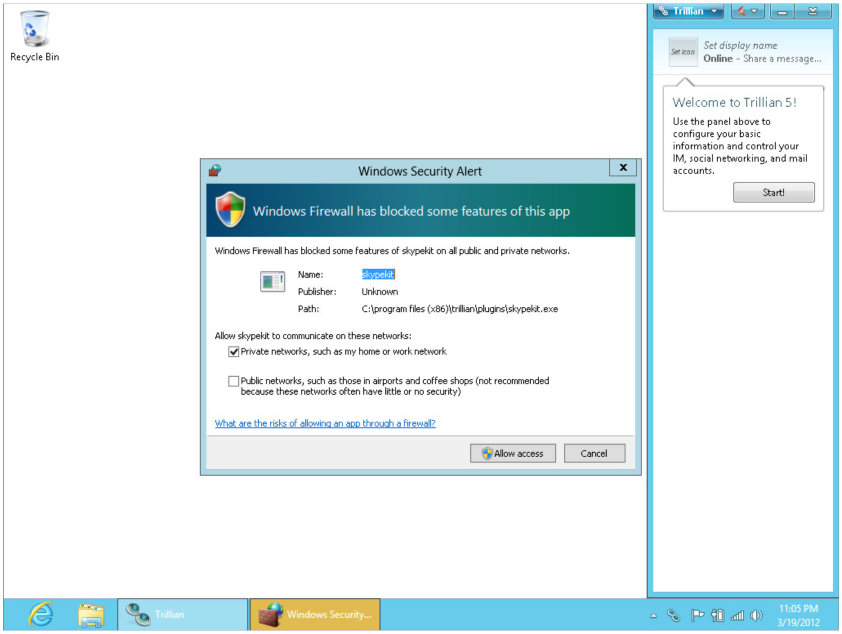
Making Exceptions to Firewall Protection

When Windows Firewall is turned on and running, you don't really have to do anything special to use it. It will be on constant vigil, automatically protecting your computer from hackers and worms trying to sneak in through unprotected ports. Ports for common Internet tasks such as e-mail and the web will be open and monitored so that you can easily use those programs safely.

Internet programs that don't use standard e-mail and web ports may require that you create an *exception* to the default firewall rules for incoming traffic. Examples include instant messaging programs and some online games. When you try to use such a program, Windows Firewall displays a security alert like the one in Figure 9.4.

FIGURE 9.4

Windows Firewall security alert



Windows Security Alert

Windows Firewall has blocked some features of this app

Windows Firewall has blocked some features of skypekit on all public and private networks.

Name: skypekit
Publisher: Unknown
Path: C:\program files (x86)\trillian\plugins\skypekit.exe

Allow skypekit to communicate on these networks:

☑ Private networks, such as my home or work network

☐ Public networks, such as those in airports and coffee shops (not recommended because these networks often have little or no security)

What are the risks of allowing an app through a firewall?

Welcome to Trillian 5!

Use the panel above to configure your basic information and control your IM, social networking, and mail accounts.

Set display name
Online - Share a message...

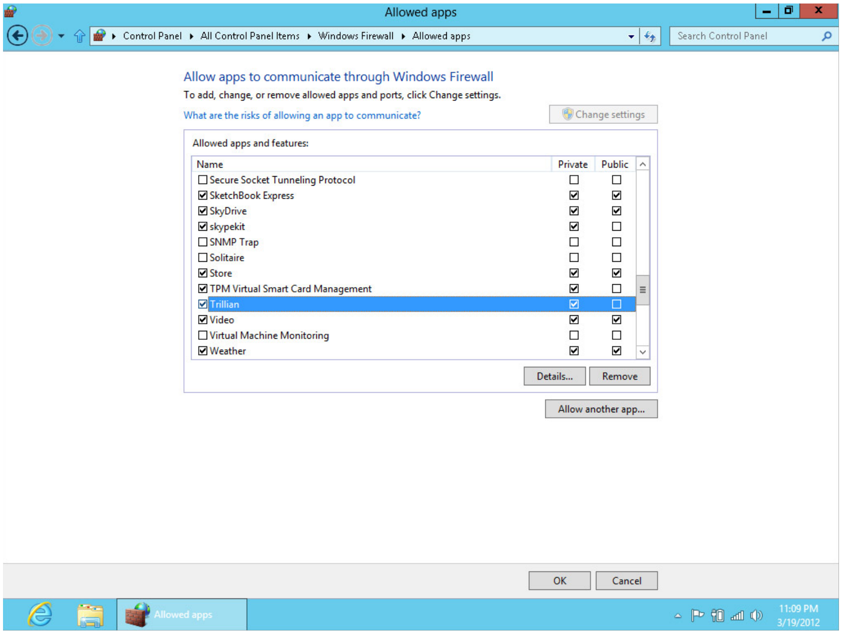
The message doesn't mean that the program is "bad." It just means that to use the program, the Firewall has to open a port. If you don't recognize the program name and publisher shown, click Cancel. If you want to use the program, first decide for which networks the exception will be allowed. For example, if the traffic is coming from another computer on your local network, select the Private Networks option. For traffic coming from the Internet, select Public Networks (you can select either or both, as needed). Then, click Allow Access. Allowing access for a program doesn't leave the associated port wide open. It just creates a new rule that allows that one program to use the port. You're still protected because the port is closed when you're not using that specific program. The port is also closed to programs other than the one for which you unblocked the port. Should you change your mind in the future, you can always reblock the port, as described in the next section.

Manually configuring firewall exceptions (allowed apps and programs)

Normally, when you try to use a program (or an app) that needs to work through the firewall, you get a message like the example shown in Figure 9.4. Occasionally, you might need, or want, to manually allow or block a program through the firewall. If you have administrative privileges, you can do that via the Allowed Apps page shown in Figure 9.5. To open that page, click Allow An App Or Program Through Windows Firewall in System And Security (by the Windows Firewall item in Control Panel).

FIGURE 9.5

Windows Firewall Allowed Apps And Features


Allowed apps
Control Panel ▸ All Control Panel Items ▸ Windows Firewall ▸ Allowed apps
Search Control Panel

Allow apps to communicate through Windows Firewall

To add, change, or remove allowed apps and ports, click Change settings.

What are the risks of allowing an app to communicate?

Change settings

Allowed apps and features:

Name	Private	Public
☐ Secure Socket Tunneling Protocol	☐	☐
☑ SketchBook Express	☑	☑
☑ SkyDrive	☑	☑
☑ skypekit	☑	☐
☐ SNMP Trap	☐	☐
☐ Solitaire	☐	☐
☑ Store	☑	☑
☑ TPM Virtual Smart Card Management	☑	☐
☑ Trillian	☑	☐
☑ Video	☑	☑
☐ Virtual Machine Monitoring	☐	☐
☑ Weather	☑	☑

Details...
Remove
Allow another app...
OK
Cancel
Allowed apps
11:09 PM
3/19/2012

Items on the list with a checkmark beside them represent apps and features that work through the firewall. You'll also see any exceptions you created in response to a security alert. For example, Trillian isn't a Windows 8 feature, so you might not see that one. It shows in Figure 9.5 because we chose to allow access for it in response to the security alert shown back in Figure 9.4.

You probably aren't familiar with most of the apps and programs listed in the Allowed Apps And Features list, so you should not select or deselect a box just by guessing. But you don't need to guess, either. If you just leave things as they are, everything will be fine. If you later decide to use one of the listed features, you'll be prompted at that point to allow access for the app or program if it's necessary to do so.

Adding an app exception

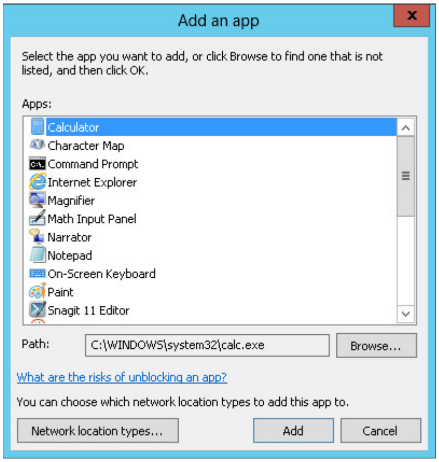
You can unblock ports for apps and programs that aren't listed under Allowed Apps And Features. You would do this only if specifically instructed to do so by an app or program manufacturer you know and trust.

If the app or program for which you want to create an exception isn't listed under Allowed Apps And Features, you can do the following:

1. Click Change Settings and then click the Allow Another App button. When you do so, you see a list of installed programs that might require Internet access, as shown in Figure 9.6.
2. Click the app or program that you want to add to the list. Optionally, if the program isn't listed, but you know where it's installed, you can use the Browse button to get to the main executable for that program (typically the `.exe` file).

FIGURE 9.6

Add An App dialog box



Add an app

Select the app you want to add, or click Browse to find one that is not listed, and then click OK.

Path: C:\WINDOWS\system32\calc.exe

What are the risks of unblocking an app?

You can choose which network location types to add this app to.

3. Clicking the Network Location Types button lets you define the addresses from which any unsolicited traffic is expected to originate. For example, if you're using a program that provides communications among programs within your local network only, you wouldn't want to accept unsolicited traffic coming to that port from the Internet. You'd want to accept unsolicited traffic coming only from

computers within your own network. When you click Network Location Types, you see the options shown in Figure 9.7. Your options are as follows:

- **Private:** For home or workplace networks. If the program in question has nothing to do with the Internet, and is for your home or business network only, choose this option to block Internet access, but allow programs within your own network to communicate with each other through the program.
- **Public:** For public networks, such as those in an airport or coffee shop. If you want the program to be able to connect to the Internet, choose this option.

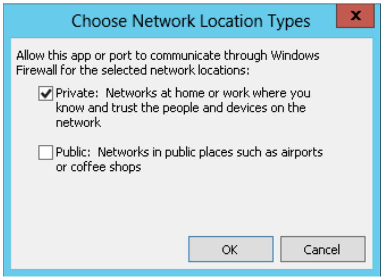
4. Click OK to save your settings.

TIP

You can choose the scope for the program within the Allowed Programs And Features list just by placing a checkmark in the Home/Work (Private) or Public columns for the program.

FIGURE 9.7

The Choose Network Location Types dialog box.



Choose Network Location Types

Allow this app or port to communicate through Windows Firewall for the selected network locations:

☑ Private: Networks at home or work where you know and trust the people and devices on the network

☐ Public: Networks in public places such as airports or coffee shops

IP Addresses on Home/Office Networks

When you set up a network using the Network Setup Wizard described in Part 10 of this book, each computer is automatically assigned a 192.168.0.*x* IP address, where *x* is unique to each computer. For example, if the computers are sharing a single Internet connection, the first computer may receive the 192.168.0.1 address, and the subsequent computers will also have addresses in that same address space.

All computers will have the same subnet mask of 255.255.255.0. The subnet mask just tells the computer that the first three numbers are part of the *network address* (the address of your network as a whole), and the last number refers to a specific *host* (computer) on that network. The 192.168 … addresses are often referred to as *private addresses* because they cannot be accessed directly from the Internet.

To see the IP address of a computer on your local network:

1. Go to that computer, display the desktop, press Windows+X, and choose Command Prompt.
2. At the command prompt, type **ipconfig /all** and press Enter. You see the computer's IP address and subnet mask listed along with other Internet Protocol data.

Disabling, changing, and deleting exceptions

The check boxes in the Allowed Apps And Features list indicate whether the exception is enabled or disabled. When you clear a check box, the exception is disabled and traffic for that program is rejected. This makes it relatively easy to enable and disable a rule for a program on an as-needed basis because the program name always remains in the list of exceptions.

To change the scope of an exception in your exceptions list, click the check box in the Private or Public column, as needed. To remove a program from the exceptions list, and stop accepting unsolicited traffic through its port, click the program name and then click the Remove button.

TIP

You cannot remove the default programs from the list — only those you have added.

Advanced Firewall Configuration

The rest of this chapter goes well beyond anything that would concern the average home computer user. It's for more advanced users and network and security administrators who might need to configure Windows Firewall to comply with an organization's security policy. All these options require administrative privileges. We don't go into great detail on what the various options mean because we assume you are working to comply with an existing policy.

CAUTION

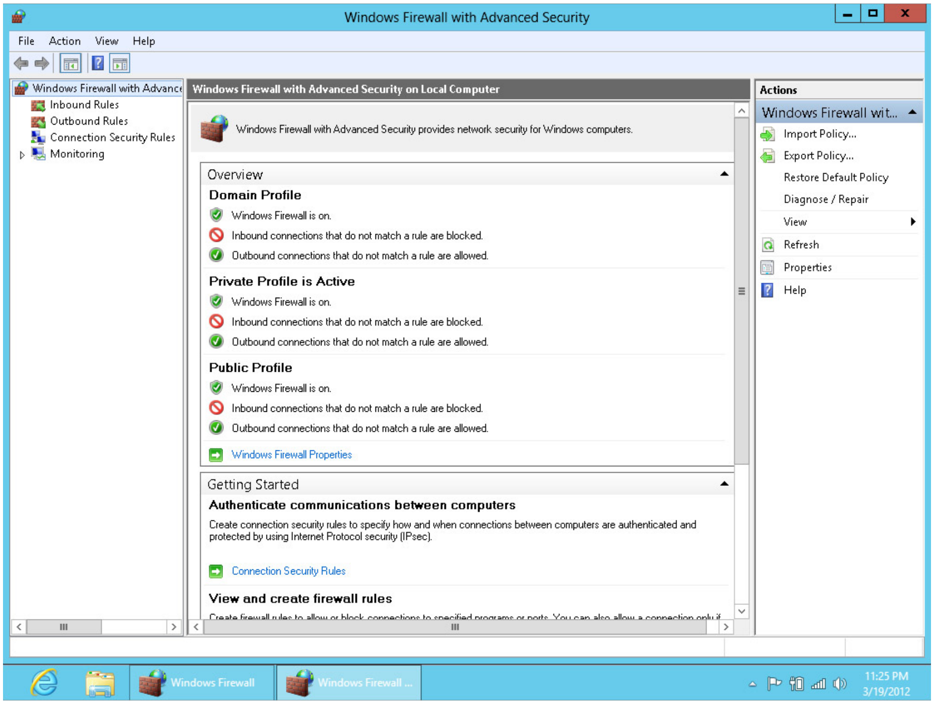
If you're not a professional administrator, it's best to stay out of this area altogether. You certainly don't want to guess and hack your way through things just to see what happens. Doing so could alter the Windows Firewall configuration such that it is wrong, causing you not to be able to connect to the Internet at all, or leaving you exposed to outside attacks by hackers.

Open Windows Firewall With Advanced Security

To get to the advanced configuration options for Windows Firewall, first open Windows Firewall from the System And Security item in the Control Panel. Then click the Advanced Settings link in the left pane. The firewall console, shown in Figure 9.8, opens.

FIGURE 9.8

Windows Firewall With Advanced Security console


Windows Firewall with Advanced Security
File
Action
View
Help
Windows Firewall with Advance
Inbound Rules
Outbound Rules
Connection Security Rules
Monitoring
Windows Firewall with Advanced Security on Local Computer
Actions
Windows Firewall wit...
Import Policy...
Export Policy...
Restore Default Policy
Diagnose / Repair
View
Refresh
Properties
Help
Windows Firewall
Windows Firewall ...
11:25 PM
3/19/2012

Windows Firewall with Advanced Security provides network security for Windows computers.

Overview

Domain Profile

Windows Firewall is on.

Inbound connections that do not match a rule are blocked.

Outbound connections that do not match a rule are allowed.

Private Profile is Active

Windows Firewall is on.

Inbound connections that do not match a rule are blocked.

Outbound connections that do not match a rule are allowed.

Public Profile

Windows Firewall is on.

Inbound connections that do not match a rule are blocked.

Outbound connections that do not match a rule are allowed.

Windows Firewall Properties

Getting Started

Authenticate communications between computers

Create connection security rules to specify how and when connections between computers are authenticated and protected by using Internet Protocol security (IPsec).

Connection Security Rules

View and create firewall rules

Create firewall rules to allow or block connections to specified programs or ports. You can also allow a connection only if

As you can see in the figure, you have three independently configurable profiles to work with:

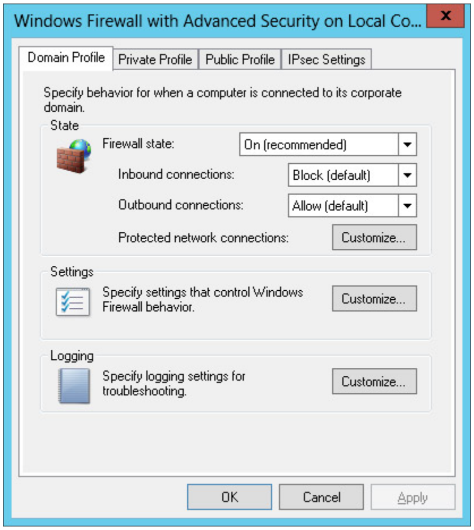
- **Domain Profile:** This is active when the computer is logged in to a network domain, such as in a corporation or business setting.
- **Private Profile:** This applies to computers within a local, private network.
- **Public Profile:** This protects your computer from the public Internet.

Changing firewall profile properties

Clicking the Windows Firewall Properties link near the bottom of the console (or the Properties item in the Actions pane) takes you to the dialog box shown in Figure 9.9. Notice that you can use tabs at the top of the dialog box to configure the Domain, Private, and Public settings. The fourth option applies to IPsec (IP Security), commonly used with VPNs (Virtual Private Networks), which are described a little later in this section. By default, Inbound Connections are set to Block and Outbound Connections are set to Allow. You can change either setting by clicking the appropriate button.

FIGURE 9.9

Windows Firewall advanced properties



Specify behavior for when a computer is connected to its corporate domain.

Firewall state: On (recommended)

Inbound connections: Block (default)

Outbound connections: Allow (default)

Protected network connections:

Specify settings that control Windows Firewall behavior.

Specify logging settings for troubleshooting.

Firewall alerts, unicast responses, local administrator control

Each profile tab has a Customize button in its Settings section. Clicking that button provides an option to turn off firewall notifications for that profile. Administrators can also use options on that tab to allow or prevent unicast responses to multicast and broadcast traffic. There's also an option to merge local administrator rules with rules defined through group policy.

Security logging

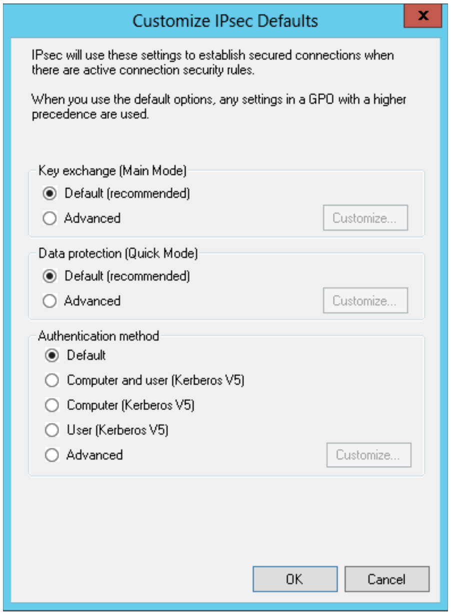
Each profile tab also offers a Logging section with a Customize button. Click the Customize button to set a name and location for the log file and a maximum size, and to choose whether you want to log dropped packets, successful connections, or both. You can use that log file to review firewall activity and to troubleshoot connection problems caused by the firewall configuration.

Customizing IPsec settings

The IPsec Settings tab in the firewall properties provides a way to configure IPsec (IP Security). Clicking the Customize button under IPsec Defaults reveals the options shown in Figure 9.10. The Default settings in each case cause settings to be inherited from a higher-level GPO (Group Policy Object). To override the GPO, choose whichever options you want to apply to the current Windows Firewall instance. When you override the default, you can choose key exchange and data integrity algorithms. You can also fine-tune Kerberos V5 authentication through those settings.

FIGURE 9.10

Customize IPsec Defaults dialog box



Customize IPsec Defaults

IPsec will use these settings to establish secured connections when there are active connection security rules.

When you use the default options, any settings in a GPO with a higher precedence are used.

Key exchange (Main Mode)
● Default (recommended)
○ Advanced

Data protection (Quick Mode)
● Default (recommended)
○ Advanced

Authentication method
● Default
○ Computer and user (Kerberos V5)
○ Computer (Kerberos V5)
○ User (Kerberos V5)
○ Advanced

Why Outbound Connections Are Set to Allow

Contrary to some common marketing hype and urban myths, having outbound connections set to Allow by default does not make your computer more susceptible to security threats. Firewalls are really about controlling traffic between trusted and untrusted networks. The Internet is always considered untrusted because it's open to the public and anything goes. It's necessary to block inbound connections by default so that you can control exactly what does, and doesn't, come in from the Internet.

Things that are already inside your computer (or local network) are generally considered "trusted." That's because, unlike the Internet, you do have control over what's inside your own PC or network. Your firewall and anti-malware programs also help to keep bad stuff out. Therefore, you shouldn't need to block outbound connections by default.

There are exceptions, of course. In a secure setting in which highly sensitive data is confined to secure workstations in a subnet, it certainly makes sense to block outgoing connections by default. That way, you can limit outbound connections to specific hosts, programs, security groups, and so forth. You can also enforce encryption on outbound connections.

Clicking OK or Cancel in the Customize IPsec Defaults dialog box takes you back to the IPsec Settings tab. There you can use the IPsec Exemptions section to exempt ICMP from IPsec, which may help with connection problems caused by ICMP rules.

NOTE

IPsec is a set of cryptographic protocols for securing communications across untrusted networks. It is commonly associated with tunneling and virtual private networks (VPNs).

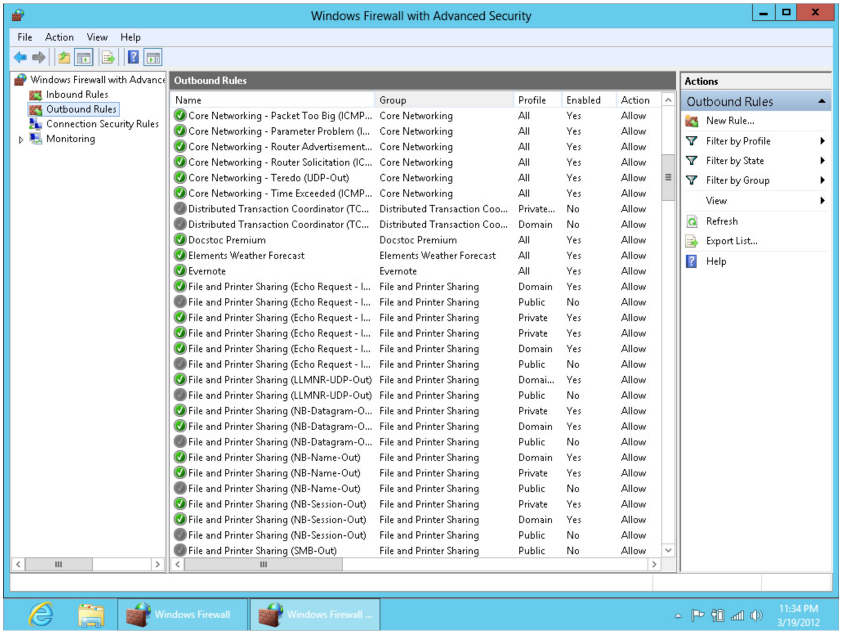
That covers the main firewall properties. You can configure plenty more outside the Properties dialog box. Again, most of these go far beyond anything the average home user needs to be concerned with, so we're being brief here. Advanced users needing more information can find plenty of information in the Help section for the firewall.

Inbound and outbound rules

In the left column of the main Windows Firewall With Advanced Security window shown back in Figure 9.8, you see Inbound Rules and Outbound Rules links. These provide very granular control over Windows Firewall rules for incoming and outgoing connections. Figure 9.11 shows a small portion of the possibilities there. Use the scrollbars to see them all.

FIGURE 9.11

Advanced outbound exceptions control



Name	Group	Profile	Enabled	Action
Core Networking - Packet Too Big (ICMP...	Core Networking	All	Yes	Allow
Core Networking - Parameter Problem (I...	Core Networking	All	Yes	Allow
Core Networking - Router Advertisement...	Core Networking	All	Yes	Allow
Core Networking - Router Solicitation (IC...	Core Networking	All	Yes	Allow
Core Networking - Teredo (UDP-Out)	Core Networking	All	Yes	Allow
Core Networking - Time Exceeded (ICMP...	Core Networking	All	Yes	Allow
Distributed Transaction Coordinator (TC...	Distributed Transaction Coo...	Private...	No	Allow
Distributed Transaction Coordinator (TC...	Distributed Transaction Coo...	Domain	No	Allow
Docstoc Premium	Docstoc Premium	All	Yes	Allow
Elements Weather Forecast	Elements Weather Forecast	All	Yes	Allow
Evernote	Evernote	All	Yes	Allow
File and Printer Sharing (Echo Request - I...	File and Printer Sharing	Domain	Yes	Allow
File and Printer Sharing (Echo Request - I...	File and Printer Sharing	Public	No	Allow
File and Printer Sharing (Echo Request - I...	File and Printer Sharing	Private	Yes	Allow
File and Printer Sharing (Echo Request - I...	File and Printer Sharing	Private	Yes	Allow
File and Printer Sharing (Echo Request - I...	File and Printer Sharing	Domain	Yes	Allow
File and Printer Sharing (Echo Request - I...	File and Printer Sharing	Public	No	Allow
File and Printer Sharing (LLMNR-UDP-Out)	File and Printer Sharing	Domai...	Yes	Allow
File and Printer Sharing (LLMNR-UDP-Out)	File and Printer Sharing	Public	No	Allow
File and Printer Sharing (NB-Datagram-O...	File and Printer Sharing	Private	Yes	Allow
File and Printer Sharing (NB-Datagram-O...	File and Printer Sharing	Domain	Yes	Allow
File and Printer Sharing (NB-Datagram-O...	File and Printer Sharing	Public	No	Allow
File and Printer Sharing (NB-Name-Out)	File and Printer Sharing	Domain	Yes	Allow
File and Printer Sharing (NB-Name-Out)	File and Printer Sharing	Private	Yes	Allow
File and Printer Sharing (NB-Name-Out)	File and Printer Sharing	Public	No	Allow
File and Printer Sharing (NB-Session-Out)	File and Printer Sharing	Private	Yes	Allow
File and Printer Sharing (NB-Session-Out)	File and Printer Sharing	Domain	Yes	Allow
File and Printer Sharing (NB-Session-Out)	File and Printer Sharing	Public	No	Allow
File and Printer Sharing (SMB-Out)	File and Printer Sharing	Public	No	Allow

Here we're getting into security matters that go beyond the scope of this book. But we think it will be easy for any professional administrator to figure out what's going on there. Options (and the Help link) in the Actions column on the right tell all. You can also change any exception in the center column by right-clicking and choosing Properties.

Wrap-Up

A firewall is an important component of a larger overall security strategy. Windows 8 comes with a built-in firewall that's turned on and working from the moment you first start your computer. The firewall is automatically configured to prevent unsolicited Internet traffic from getting into your computer, thereby protecting you from worms and other hacking attempts. The Windows 8 firewall also provides advanced options for professional network and security administrators who need more granular control over its behavior. In summary:

- A firewall protects your computer from unsolicited network traffic, which is a major cause of worms and other hack attempts.
- A firewall will not protect your computer from viruses, pop-up ads, or junk e-mail.
- You don't need to configure the firewall to use standard Internet services such as the web and e-mail. Those will work through the firewall automatically.
- When you start an Internet program that needs access to the Internet through a closed port, you'll be given a security alert with options to Unblock, or Keep Blocking, the port. You must choose Unblock to use that program.
- Windows Firewall is one of the programs in the Security Center. To open Security Center, press Windows+X and choose Control Panel ➪ Security ➪ Security Center.
- To get to Windows Firewall configuration options, from the Windows Start screen, open the Charms Bar and choose Search. On the Search page, click Control Panel ➪ Security ➪ Security Center.
- Exceptions in Windows Firewall are programs that are allowed to work through the firewall.
- Professional network and security administrators can configure Windows Firewall through the Windows Firewall With Advanced Security console in Administrative Tools.

CHAPTER 10

Conquering Malicious Software

IN THIS CHAPTER

- Understanding malware
- Beating viruses and spyware with Windows Defender
- Killing and preventing viruses
- De-worming with the Malicious Software Removal Tool

Malicious software (also called *malware*) is any *software* program that's intentionally designed to cause your computer harm or invade your privacy. These are not programs you purchase, or programs from reputable software manufacturers such as Microsoft, Adobe, Apple, and others. They generally don't have icons, and you don't have to run them yourself. Rather, they're tiny programs that are hidden inside your system and do their dirty work without your knowing it.

As you learn in this chapter, several forms of malware exist including viruses, worms, spyware, and adware. As you also discover in this chapter, you can take actions to prevent your computer from getting malware. And when it's too late for that, you can take steps to get rid of malware. This chapter starts with a discussion of the most prevalent form of malware today, spyware.

Types of Malware

Malicious software comes in many forms. All forms have certain things in common, however. For one, they're invisible — you don't even know they're there. For another, they all do something bad, something you don't really want happening on your computer. Third, they're all written by human programmers to intentionally do these bad things. The differences have to do with how they spread and what they do after they're on your computer. We tell you about the differences in the sections that follow.

Viruses and worms

Viruses and worms are self-replicating programs that spread from one computer to the next, usually via the Internet. A virus needs a *host file* to spread from one computer to the next. The host file can be anything, although viruses are typically hidden in e-mail attachments and programs you download.

A worm is similar to a virus in that it can replicate itself and spread. However, unlike a virus, a worm doesn't inject itself into another file to infect your computer. It can go from one computer to the next right through your Internet connection. That's one reason it's important to always have a firewall up when you're online — to keep out worms that travel through Internet connections. For more on firewalls, see Chapter 9.

The harm caused by viruses and worms ranges from minor pranks to serious damage. A minor prank might be something like a small message that appears somewhere on your screen where you don't want it. A more serious virus might erase important files, or even try to erase all your files, rendering your computer useless.

Spyware and adware

Spyware and adware are malware that's not designed to specifically harm your computer. Rather, they're designed to help people sell you stuff. A common *spyware* tactic is to send information about the websites you visit to computers that send out advertisements on the Internet. These computers analyze the websites you visit to figure out what types of products you're most likely to buy. They then send ads about such products to your computer.

Adware is the mechanism that allows ads to appear on your computer screen. When you get advertisements on your screen, seemingly out of the clear blue sky, there's usually some form of adware behind it. Spyware and adware often work in conjunction with one another. The adware provides the means to display ads. The spyware helps the ad server (the computer sending the ads) choose ads for products you're most likely to buy.

Trojan horses and rootkits

You may have heard the term *Trojan horse* in relation to early mythology. The story goes like this. After 10 years of war with the city of Troy, the Greeks pretended to call it quits. As a peace offering, the Greeks gave the people of Troy a huge horse statue named the Trojan horse.

While the people of Troy were busy celebrating the end of the war, Greek soldiers hidden inside the horse snuck out and opened the gates to the city from inside. This allowed other Greek soldiers, lying in wait hidden outside the city, to storm into the town and conquer it. (This is definitely a case in which it would have been wise to look a gift horse in the mouth.)

A Trojan horse is a program that works in a similar manner. In contrast to other forms of malware, a Trojan horse is a program you can actually see on your screen and use. On the surface, it does something useful, such as manage banking account information. However, hidden inside the program is some smaller program that does bad things (such as send your account credentials to a malicious user), usually without your knowledge.

A Trojan horse can also be a program that hides nothing but can be used in bad ways. Take, for example, a program that can recover lost passwords. The advantage is you can use it to recover forgotten passwords from files you created yourself. But the disadvantage is a hacker can use it to break into other people's password-protected files.

A *rootkit* is a program that is capable of hiding itself, and the malicious intent of other programs, from the user and even from the system. For example, a video player you install could hide software that steals credit card information that you use on Amazon.com or similar online store. As with Trojan horses, not all rootkits are inherently malicious. However, they can certainly be used in malicious ways. Windows 8 protects your system from rootkits in many ways, including Windows Defender.

Conquering Viruses and Spyware with Windows Defender

There are many programs on the market that are designed to prevent and eliminate spyware (and adware), but you don't have to spend any money or download any third-party programs to protect your system from these threats. You can use Windows Defender, which comes with Windows 8 for free. Despite its focus on spyware, Defender actually protects your computer from any potentially unwanted programs. That includes many types of adware, Trojan horses, and rootkits.

Windows Defender is designed to locate and eradicate viruses and spyware. There are basically two ways to deal with viruses and spyware. The best is to *prevent* them before they infect your system. The other is to detect and remove them after your computer has already been infected.

As you read earlier, viruses can cause a great deal of harm to your computer. Therefore, it's best to always run an anti-virus program like Windows Defender.

NOTE

Windows Defender was a popular download for Windows XP. It came free with Windows Vista, Windows 7, and now Windows 8, so there's nothing to download.

Spyware (and its close cousin adware) isn't specifically designed to cause your computer harm. But even without the direct intent to do harm, spyware can have serious consequences. Too much spyware can bog your system down, causing everything to run slower than it should. Spyware can make unwanted changes to your Internet settings, causing your web browser to act in unexpected ways. Spyware can lead to many annoying pop-up ads. In the worst cases, it can send personally identifiable information about you to identity thieves.

Most spyware comes from software that you can download for free, such as screen savers, custom toolbars, and file-sharing programs. However, it can also be installed automatically from scripts and programs embedded in web pages.

Opening Windows Defender

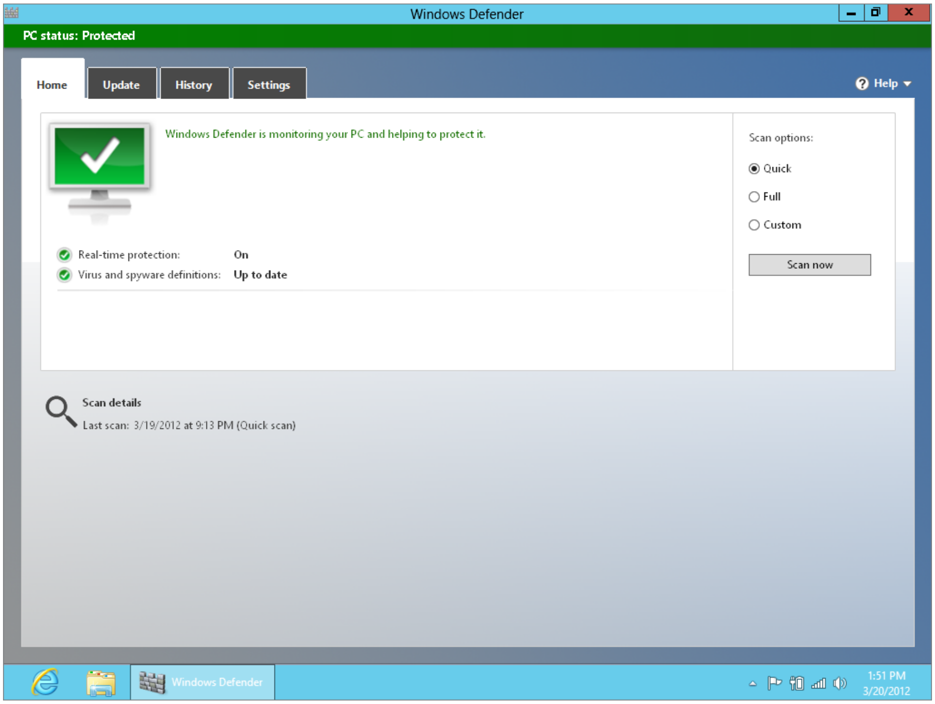
You don't need to open Windows Defender to protect your computer. But you can do other things with Defender that do require opening the program. As with most programs, you have many ways to open Defender. Use whichever is most convenient for you at the moment:

- From the desktop, press Windows+X, choose Control Panel, and choose Small Icons from the View By drop-down list. Click Windows Defender to launch it.
- From the Windows Start screen, display the Charms and click Search. Type **def** in the Search box and click Windows Defender.

When Windows Defender opens, it looks something like Figure 10.1.

FIGURE 10.1

Windows Defender



PC status: Protected

Windows Defender is monitoring your PC and helping to protect it.

Real-time protection: On
Virus and spyware definitions: Up to date

Scan options:
● Quick
○ Full
○ Custom

Scan details
Last scan: 3/19/2012 at 9:13 PM (Quick scan)

Removing malicious software from your computer

Windows Defender offers many tools for fighting malicious software. One scans your system for any malicious program or file that you might have already acquired. On the Home tab of Windows Defender, you see three Scan Options (shown in Figure 10.1):

- **Quick scan:** As its name implies, the Quick scan takes less time because it focuses on areas where malicious software is most likely hiding and because it checks only new files and the kinds of files commonly used by viruses, spyware, or other malicious software.
- **Full scan:** This takes a while because it scans every file on your hard disk, but gives you the peace of mind of knowing that your system is free of malicious software. A full scan takes several minutes (or longer depending on the size of the storage drives you are scanning), so you need to be patient.

NOTE

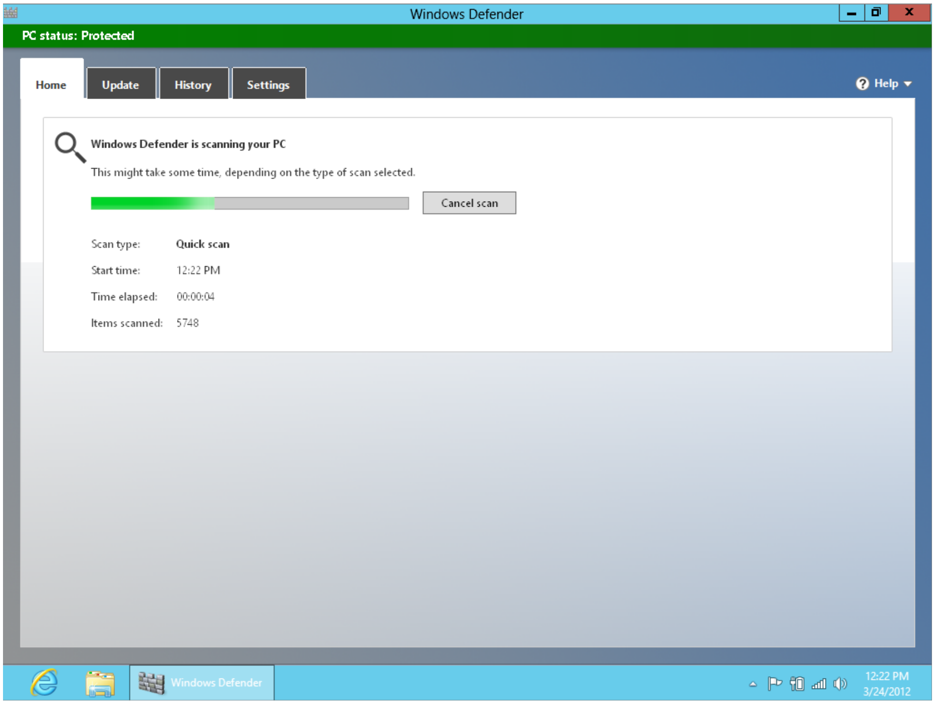
After you've done a single full scan, quick scans are sufficient.

- **Custom scan:** This lets you choose which drives you want to scan. More on this in the section "Performing a custom scan."

To perform a scan, click the desired scan option and then click the Scan Now button (shown in Figure 10.1), and Defender starts scanning your system as shown in Figure 10.2.

FIGURE 10.2

Scan for spyware



PC status: Protected

Windows Defender is scanning your PC

This might take some time, depending on the type of scan selected.

Scan type: Quick scan
Start time: 12:22 PM
Time elapsed: 00:00:04
Items scanned: 5748

12:22 PM
3/24/2012

When the scan is complete, you should see a clean bill of health. If not, suspicious items will be *quarantined* (disabled). You should be taken to the quarantined list automatically, although you can get there any time by choosing History ➪ Quarantined Items ➪ View Details. You can see details on quarantined items, allowed items (which are items you let run on your computer), or all detected items.

Each item in the quarantined list has an alert level associated with it. Here's what each alert level means:

- **Severe or High:** This item is known to compromise the security of your computer. Or this item may be too new to be well known. But all indications point to malicious intent, so the item should be removed immediately.
- **Medium:** This item appears to collect personal information or change Internet settings. Review the item details. If you do not recognize or trust the publisher, block or remove the item.
- **Low:** This is a potentially unwanted item that should be removed if you did not intentionally install it yourself.

To remove an item, click its name and click Remove. You can usually click Remove All, because valid, useful programs are rarely detected as viruses, spyware, or other potentially unwanted items. If in doubt, you can leave the item quarantined for a while. Use your computer normally to see whether some useful program no longer works. After you've determined that everything is okay, you can go back into Quarantined Items and remove anything you left behind.

Should you ever encounter a false positive (where an innocent program is quarantined), don't remove it. Instead, click its name and then click Restore.

Performing a custom scan

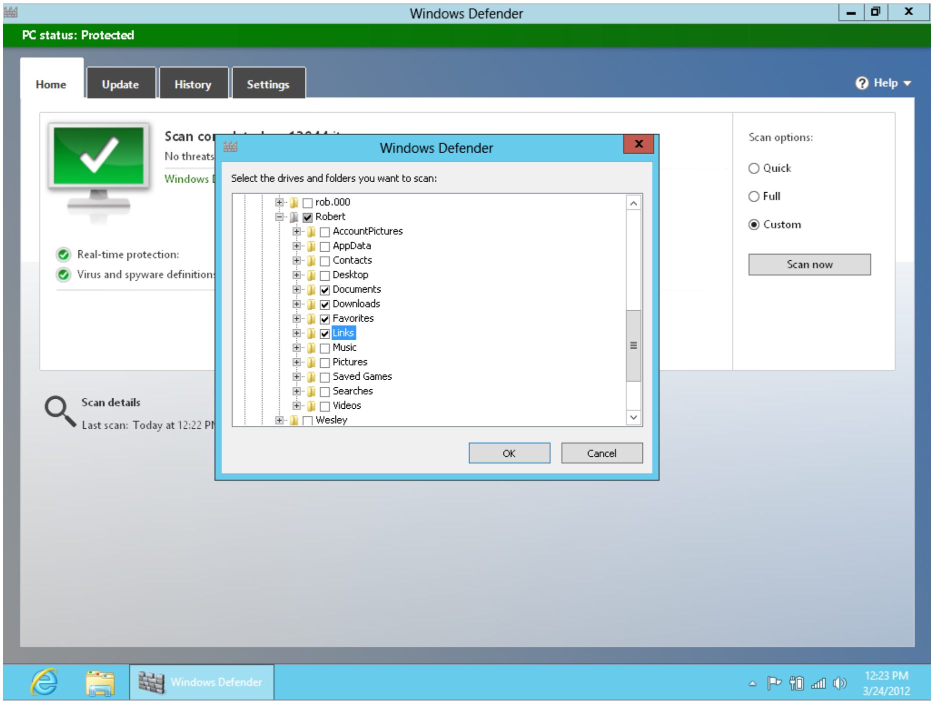
A custom scan lets you scan a specific drive or folder. For example, if someone sends you a flash drive or DVD, you might want to check that disk before copying or opening any files from it.

For downloads, you might consider creating a subfolder within your Downloads folder, perhaps named Unscanned or something similar. Whenever you download a file or save an e-mail attachment that you don't trust 100 percent, save it to that Unscanned folder. Then scan just the folder to make sure all is well. If the files check out okay, you can then move them to any folder you like. Or, in the case of a downloaded program, click the icon to start the program installation.

To do a custom scan, choose the Custom option on the Home tab in Windows Defender and click the Scan Now button. Click to select the drive you want to scan, like the example shown in Figure 10.3. Or, expand any drive icon and select the specific folder you want to scan. Then click OK to start the scan.

FIGURE 10.3

Use Custom scan to scan only specific drives or folders



PC status: Protected

Scan co
No threats
Windows

Real-time protection:
Virus and spyware definition

Scan details
Last scan: Today at 12:22 PI

Windows Defender

Select the drives and folders you want to scan:

- ☐ rob.000
- ☑ Robert
  - ☐ AccountPictures
  - ☐ AppData
  - ☐ Contacts
  - ☐ Desktop
  - ☑ Documents
  - ☑ Downloads
  - ☑ Favorites
  - ☑ Links
  - ☐ Music
  - ☐ Pictures
  - ☐ Saved Games
  - ☐ Searches
  - ☐ Videos
- ☐ Wesley

Scan options:

○ Quick
○ Full
● Custom

Preventing malicious software using real-time scanning

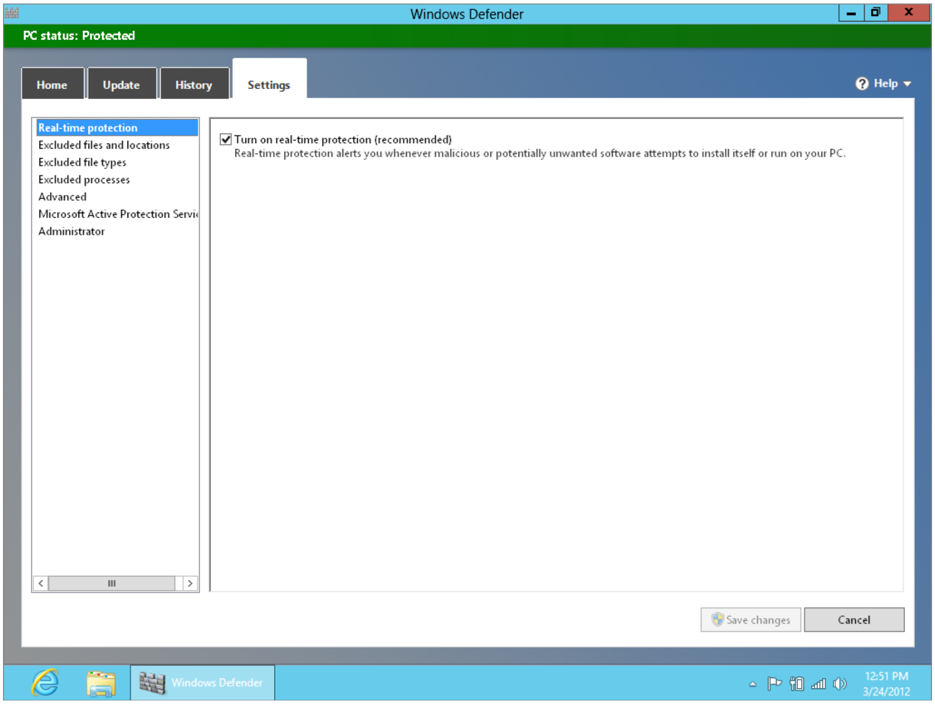
You've probably heard the saying "An ounce of prevention is worth a pound of cure." That's certainly true of viruses, spyware, and other malicious software. Getting rid of malicious software that has already infected your computer is a good thing. But preventing it from getting there in the first place is even better. That's where *real-time protection* comes into play. The term "real time" means "as it's happening."

The Windows Defender real-time protection analyzes files as they approach your computer from the Internet. Any virus, spyware, or suspicious-looking files are blocked to keep your computer from being infected. If Defender detects a potential threat, it alerts you to the issue and quarantines the threat.

To turn on real-time protection (it is turned on by default), click the Settings tab and choose the Real-Time Protection item in the left panel. Click Turn On Real-Time Protection and then choose Save Changes. Figure 10.4 shows an example of the real-time scanning option.

FIGURE 10.4

Real-time scanning option


Windows Defender
Home
Update
History
Settings
Help
Real-time protection
Excluded files and locations
Excluded file types
Excluded processes
Advanced
Microsoft Active Protection Servi
Administrator
Save changes
Cancel
Windows Defender
12:51 PM
3/24/2012

PC status: Protected

☑ Turn on real-time protection (recommended)
Real-time protection alerts you whenever malicious or potentially unwanted software attempts to install itself or run on your PC.

If you turn off real-time scanning, Windows displays a red banner at the top of the Windows Defender window that specifies that your computer is at risk. You also will receive a Windows alert that appears on the task bar indicating that you need to protect your compute, which you can do by re-enabling the real-time protection option.

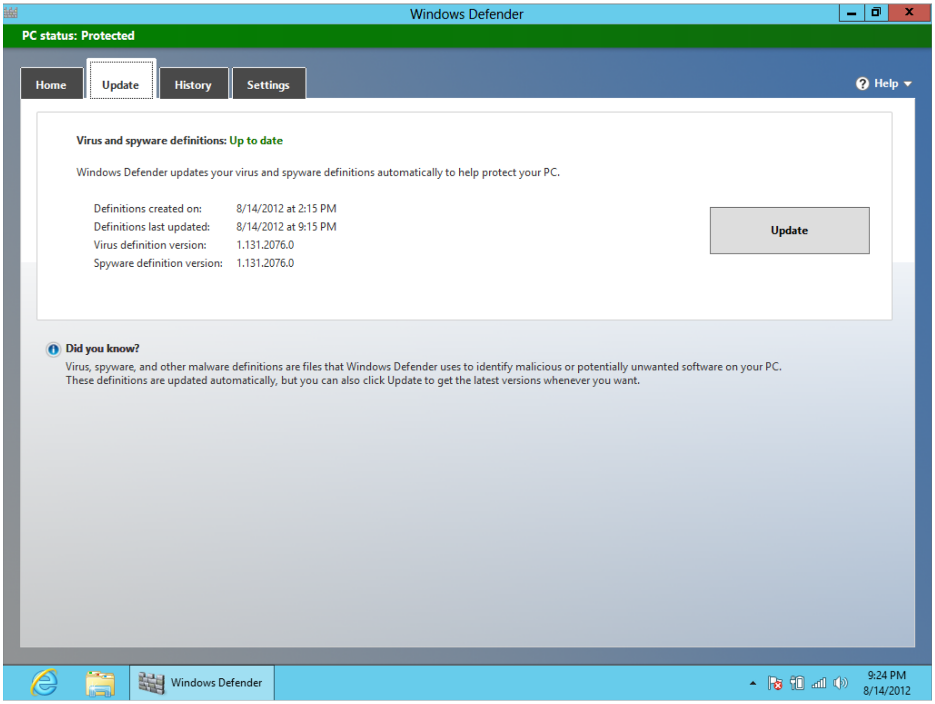
Windows Defender updates

Each virus and malware item that Defender identifies has a *definition* that specifies its intent, severity, and recommended actions. The definitions are created by human experts who have previously found and analyzed the item. To keep up with threats posed on the Internet and other online locations, Windows Defender definitions are added seemingly every day.

To keep your system as safe as possible, definitions are updated automatically to Windows Defender based on your Windows Update schedule. See Chapter 9 for more information about Windows Updates. You can view information about the updates by clicking the Update tab on the Windows Defender window, as shown in Figure 10.5.

FIGURE 10.5

Windows Defender update information



Virus and spyware definitions: Up to date

Windows Defender updates your virus and spyware definitions automatically to help protect your PC.

Definitions created on: 8/14/2012 at 2:15 PM
Definitions last updated: 8/14/2012 at 9:15 PM
Virus definition version: 1.131.2076.0
Spyware definition version: 1.131.2076.0

Did you know?
Virus, spyware, and other malware definitions are files that Windows Defender uses to identify malicious or potentially unwanted software on your PC. These definitions are updated automatically, but you can also click Update to get the latest versions whenever you want.

The Update tab includes the date and time when the last definitions were created and the last time you updated your copy of Windows Defender. You also can see the version numbers of the virus and spyware defenders installed on your computer. This information can be helpful for troubleshooting purposes in the future.

If you want to update your definitions manually, click the Update button. Windows Defender searches for and downloads any new virus and spyware definitions.

Excluding files and folders

In some situations, you might want to exclude certain files or folders from being scanned by Windows Defender. For example, if there are folders or files that you know are safe but could take a long time for Windows Defender to scan or could cause problems when scanned, you can exclude them. You can also exclude files based on their file type.

To set folder or file exclusions, follow these steps:

1. Choose the Settings tab on the Windows Defender window.
2. Click the Excluded Files And Locations link and click Browse to select a folder or file.
3. After selecting the files or folders to exclude from scanning, click OK to return to the Settings tab.
4. Click the Add button to add them to the list of files and locations that appear in the lower box of the Settings tab.
5. Repeat the process for any other folders or files you want excluded.
6. When finished, be sure to click the Save Changes button at the bottom of the Settings tab, which will save all your settings.

To exclude files by type, follow these steps:

1. Click the Excluded File Types link on the left side of the Settings tab.
2. Click in the File Extensions text box, type the file extension of the files you want to exclude from scanning, and click Add.
3. For a list of multiple extensions, separate each extension by a semicolon.
4. Click Save Changes to save your changes.

Finally, if certain computer processes take a long time to scan, you can exclude them from the Windows Defender scans. To do this:

1. Click the Excluded Processes on the left side of the Settings tab and click Browse to select the processes to exclude.
2. Click OK and then Add to add them to your list of excluded processes.
3. Repeat as needed.
4. Be sure to click Save Changes when your list is completed.

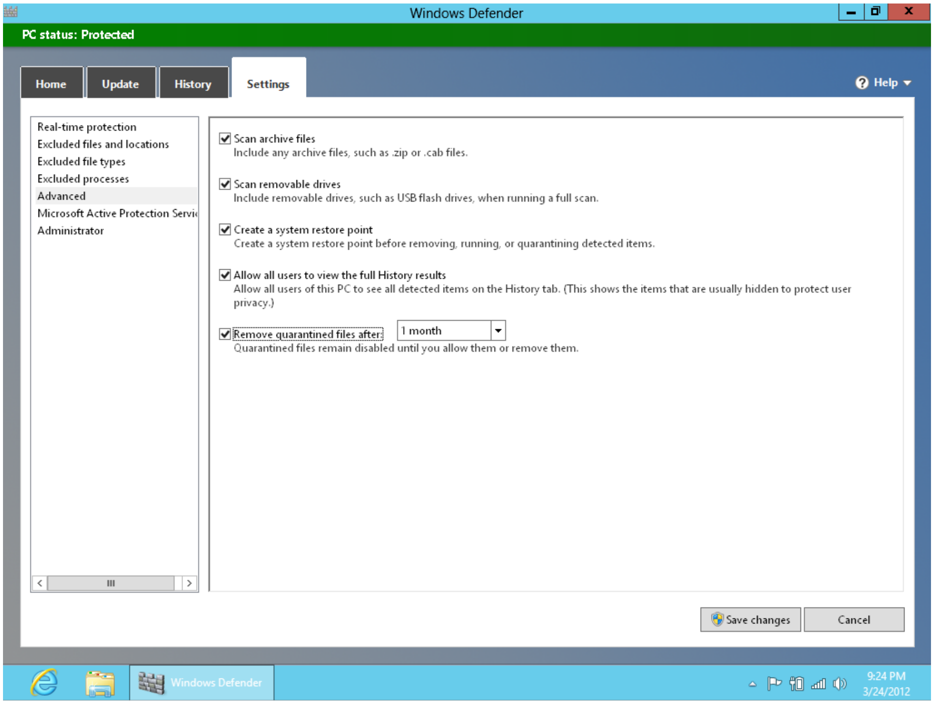
Advanced configuration options

If you click Advanced on the Settings tab, you see the Advanced options shown in Figure 10.6. These options include the following:

- **Scan Archive Files:** Scan inside archive files such as ZIP and CAB files for malware.
- **Scan Removable Drives:** Scan USB and other removable media for malware.
- **Create Restore Point:** Create a Windows Restore Point prior to applying actions to detected items to enable you to roll back Windows to its previous state.
- **Allow All Users To View The Full History Results:** Enables all users to view the history of all detected files on the computer.
- **Remove Quarantine Files After:** Specifies the length of time that quarantined files remain on the systems. The default is 1 month, but you have the choices of 1 to 4 days, 1 to 2 weeks, or 1 to 3 months.

FIGURE 10.6

Advanced Defender configuration options


Windows Defender
PC status: Protected
Home
Update
History
Settings
Help
Real-time protection
Excluded files and locations
Excluded file types
Excluded processes
Advanced
Microsoft Active Protection Servic
Administrator
Save changes
Cancel
Windows Defender
9:24 PM
3/24/2012

☑ Scan archive files
Include any archive files, such as .zip or .cab files.

☑ Scan removable drives
Include removable drives, such as USB flash drives, when running a full scan.

☑ Create a system restore point
Create a system restore point before removing, running, or quarantining detected items.

☑ Allow all users to view the full History results
Allow all users of this PC to see all detected items on the History tab. (This shows the items that are usually hidden to protect user privacy.)

☑ Remove quarantined files after: 1 month
Quarantined files remain disabled until you allow them or remove them.

TIP

You can use the technique described under “Returning to a Previous Restore Point” in Chapter 31 to restore everything to its previous state.

Joining MAPS

Microsoft Active Protection Service (MAPS) is a service that collects information about your system and any detected malware and sends that information to Microsoft. Microsoft uses that information to create new definitions to combat malicious software on your computer and others that use Windows Defender. To join MAPS:

1. Click the Microsoft Active Protection Service link on the left side of the Settings tab. You have the following choices:
    - **I Don’t Want to Join Maps:** Use this option to opt out of sending information to MAPS. This will not keep you from getting updated Windows Defender definitions, but threats found on your computer will not be shared to the MAPS system.

- **Basic Membership:** Sends information such as where the malicious software came from and any actions your system takes to automatically remove that threat.
- **Advanced Membership:** Sends basic information (see above), as well as more specific information such as the software's impact, the location of the software on your computer, the software's file name, and actions that the software takes on your computer.

2. Click Save Changes to save your changes.

User Account Control and Malware

User Account Control (UAC) is yet another form of malware protection. In contrast to the anti-malware programs described in this chapter, which are designed to keep malware out of your PC, UAC prevents malicious programs that have already infiltrated your system from doing their evil deeds. Although Windows 8 significantly reduces the number of alerts it displays, it still might be tempting to turn off UAC to get rid of that occasional extra mouse click for the approval it requires. But remember that in doing so, you're lowering your computer's resistance to malware. For more information on User Account Control, see Chapter 5.

The Malicious Software Removal Tool

There is one last malware protection tool you'll want to know about before we put this topic to rest. It's called the Microsoft Safety Scanner tool that you can download and install on your computer. Its primary focus is on worm and rootkit removal: `http://www.microsoft.com/security/scanner/en-us/default.aspx`

Once downloaded, the file expires after 10 days. To run the tool again after 10 days, you must download the file again and run it.

Wrap-Up

Malicious software (called "malware" for short) is computer software that's intentionally written to invade your privacy or cause harm. This is not the kind of thing you purchase or download from legitimate software vendors. Nor does it announce its presence to you on the screen. Rather, it sneaks into your computer through tainted programs and e-mail attachments without your knowledge. This chapter has covered the main types of malware and defenses to take against them:

- Viruses and worms are harmful programs that can spread from one computer to the next via the Internet or other network connection.

- Most viruses are spread through e-mail attachments or tainted programs from deceptive websites.
- Spyware is a form of malware designed to invade your privacy, and it is the largest and most common Internet threat today.
- Windows Defender is a program that comes free with Windows 8 to protect your computer from viruses, spyware, and similar forms of malicious software.
- Windows Defender can scan your system for unwanted software and remove it.
- Defender's real-time protection prevents spyware from getting on your computer in the first place.
- The Windows Action Center alerts you if it cannot find antivirus software on your computer.
- The Malicious Software Removal Tool (MSRT) is an online tool specializing in worm removal. Run it once a month or so to ensure that your computer is free of worms.

CHAPTER 11

Automatic Updates as Security

IN THIS CHAPTER

- Using automatic updates
- Activating automatic updates
- Configuring updates
- Using Data Execution Protection (DEP)

Internet security is a never-ending cat-and-mouse game between the security experts and the hackers who seem to have endless amounts of time to search for new ways to exploit the basic programmability of PCs. It seems that every time the good guys find a way to patch some security hole the bad guys have learned to exploit, the bad guys find two more holes to exploit.

Windows 8 is certainly the most secure Windows version ever, by a long shot. But there is no such thing as a 100-percent secure computer because people can always find a way to take something good and turn it into something bad. So in addition to the security features discussed in the preceding chapters, you need to keep your computer up-to-date with security patches as they become available. That's what Windows Update and this chapter are all about.

Understanding Automatic Updates

Many people are afraid of Windows Update. They're afraid that the updates will break something on their system that they can't fix. It's certainly true that any change to your system could create a problem. But it's unlikely that keeping up with updates will cause any significant problems — certainly nowhere near as many problems as you expose yourself to by *not* keeping up with updates. In addition, Windows Update creates restore points before installing many updates (but not for all updates), so you have the added security of being able to restore the system to a point prior to the update.

Others fear that Microsoft will somehow exploit them through automatic updates. That's not the way it works. Microsoft has tens of millions of customers and tens of billions of dollars. It doesn't need to exploit anybody to be successful. Desperate people (and companies) do desperate, exploitive things. Microsoft is as far from desperate as you can get.

Microsoft is also a publicly held company on the stock exchange, which means it is subject to constant scrutiny. Such companies are not the ones that distribute malware. Most malware comes from e-mail attachments and free programs from unknown sources. When it comes to knowing who to trust and not to trust, large publicly-held companies are by far the most trustworthy, if for no other reason than that they can't afford to be untrustworthy. A third common fear of automatic updates centers around the question "What's this going to cost me?" The answer to that is simple: Absolutely nothing. This brings us to the difference between *updates* and *upgrades*.

Some Hacking Lingo

The hacking world is replete with its own terminology. A *zero day exploit* is one that exploits a problem in software before the software vulnerability is known by the software company. A *blackhat* is a bad guy who has sufficient technical knowledge to find and publish exploits. A *script kiddie* is someone (sometimes simply an inexperienced programmer who doesn't have enough skills to create or discover his own exploits) who runs scripts and malware created by more experienced hackers. A *whitehat* is one of the good guys — the security experts who find ways to thwart the efforts of blackhats and script kiddies.

Updates versus upgrades

People often assume that the terms *update* and *upgrade* are synonymous. We certainly use the terms interchangeably in common parlance. But in the computer world, there is a big difference. Upgrades usually cost money and involve a fair amount of work. For example, upgrading from Windows 7 to Windows 8 will cost you some money and take some time.
You might even need to hire someone to verify that the upgrade will work and do the upgrade for you.

Updates are much different. Updates are small, simple, and free of charge. Some people turn off automatic updates because they're afraid they'll get some mysterious bill for something they downloaded automatically without realizing it. That will not happen. Turning on and using automatic updates will not cost you a penny.

Why updates are important

Automatic updates are an important part of your overall security. Many forms of malware, especially viruses and worms, operate by exploiting previously unnoticed flaws in programs. The term *exploit*, when used as a noun in computer science, refers to any piece of software that can take advantage of some vulnerability in a program in order to gain unauthorized access to a computer.

Some hackers actually publish, on the Internet, exploits they discover, which is both a good thing and a bad thing. The bad thing is that other hackers can use the exploit to conjure up their own malware, causing a whole slew of new security threats. The good thing is that the good guys can quickly create security patches to prevent the exploits from doing their nefarious deeds. Automatic updates keep your system current with *security patches* that fix the flaws that malware programs attempt to exploit.

Enabling Automatic Updates

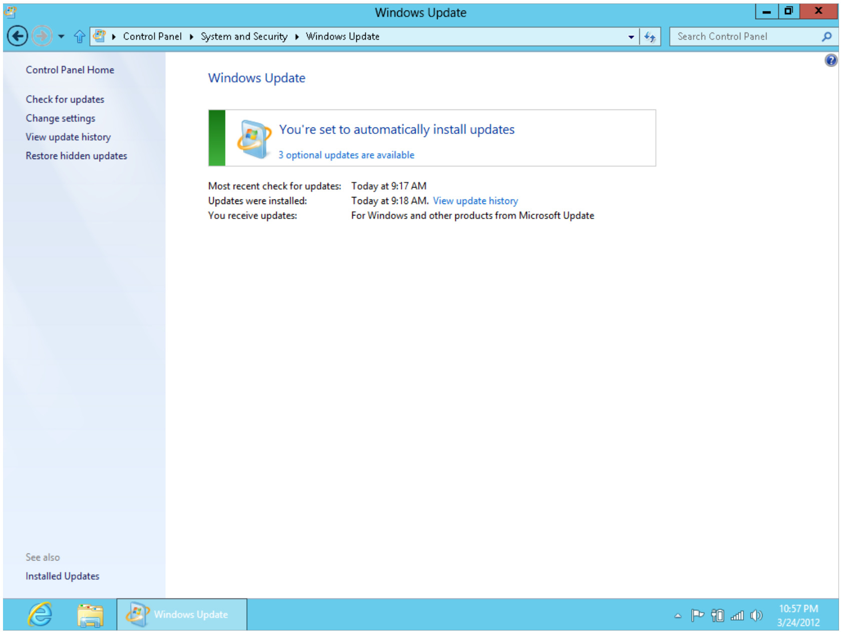
Automatic updates are the best way to keep up with security patches. In fact, chances are they are already enabled on your system. To find out, open Windows Update. As you know from previous chapters, you can use any technique that follows to open Windows Update:

- At the desktop, press Windows+X and choose Control Panel ➪ System And Security ➪ Windows Update.
- At the Windows Start screen, show the Charms Bar and choose Search. Click Control Panel ➪ System And Security ➪ Windows Update.

Figure 11.1 shows the Windows Update applet. To determine Windows Update's status, click the Change Settings link in the left pane. The Important Updates drop-down list shows the current setting.

FIGURE 11.1

Windows Update


Windows Update
Control Panel ▸ System and Security ▸ Windows Update
Search Control Panel
Control Panel Home
Check for updates
Change settings
View update history
Restore hidden updates
Windows Update
See also
Installed Updates
Windows Update
10:57 PM
3/24/2012

You're set to automatically install updates

3 optional updates are available

Most recent check for updates: Today at 9:17 AM

Updates were installed: Today at 9:18 AM. View update history

You receive updates: For Windows and other products from Microsoft Update

If automatic updates are turned off, seriously consider turning them on. To do so, click the Change Settings link in the Windows Update applet, and then choose from one of the four options that enable Windows Update.

Managing Updates

Automatic updates related to security require little or no effort on your part. But sometimes you may be faced with optional updates. These updates aren't security related. Rather, they're new versions of drivers, fixes for minor bugs, or some other type of update. They're optional because your computer is secure whether you install the update or not.

Managing optional updates

To manage optional updates and tweak some settings, use the Windows Update applet in Control Panel. To get to that applet, do one of the following:

- At the desktop, press Windows+X and choose Control Panel ➪ System And Security ➪ Windows Update.
- At the Windows Start screen, show the Charms Bar and choose Search. Click Control Panel ➪ System And Security ➪ Windows Update.

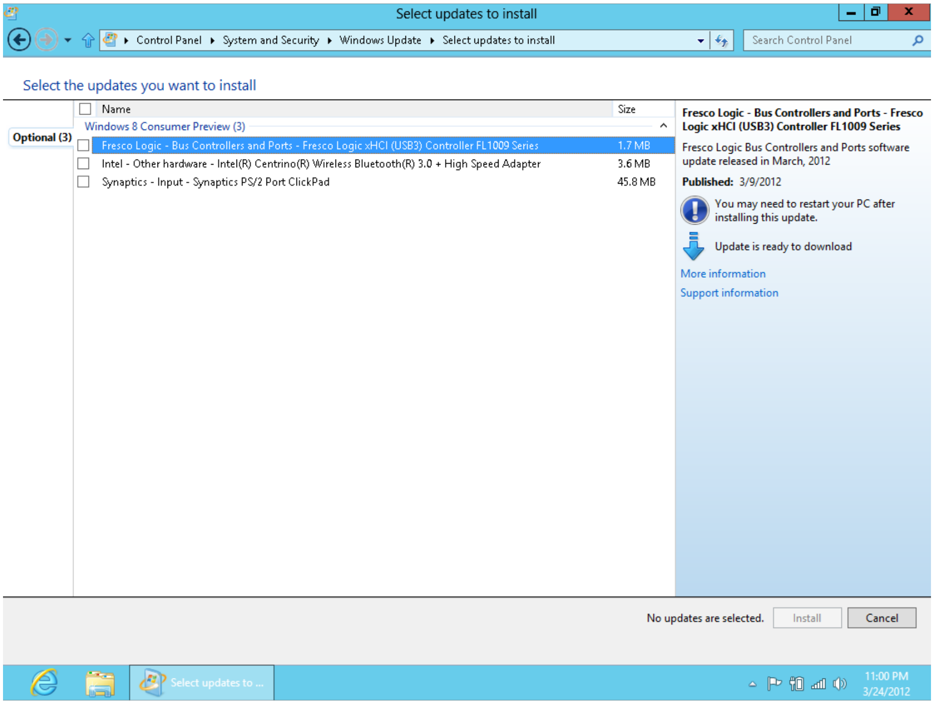
Figure 11.1 shows the Windows Update applet. If there are any optional updates, click the Optional Updates link to see what they are. The name of each will be listed next to an empty check box (see Figure 11.2). You have three options for dealing with each one:

- If you want to download and install the update, select its check box.
- If you want to hide the item so it doesn't show up in the future, right-click it and choose Hide Update. (It won't go into hiding until you leave the current window.) Right-click and choose Restore Update to restore a hidden update.
- If you want to get more information about the item before you decide, click its name and view more information about the update in the right pane.

If you selected optional updates to install, click Install to return to the Windows Update window and start the download and installation process. If you don't want to install any optional updates, simply close Windows Update.

FIGURE 11.2

Optional updates


Select updates to install
Control Panel ▸ System and Security ▸ Windows Update ▸ Select updates to install
Search Control Panel
Optional (3)
More information
Support information
Install
Cancel
Select updates to ...
11:00 PM
3/24/2012

Select the updates you want to install

	Name	Size
☐	Windows 8 Consumer Preview (3)	
☐	Fresco Logic - Bus Controllers and Ports - Fresco Logic xHCI (USB3) Controller FL1009 Series	1.7 MB
☐	Intel - Other hardware - Intel(R) Centrino(R) Wireless Bluetooth(R) 3.0 + High Speed Adapter	3.6 MB
☐	Synaptics - Input - Synaptics PS/2 Port ClickPad	45.8 MB

Fresco Logic - Bus Controllers and Ports - Fresco Logic xHCI (USB3) Controller FL1009 Series

Fresco Logic Bus Controllers and Ports software update released in March, 2012

Published: 3/9/2012

You may need to restart your PC after installing this update.

Update is ready to download

No updates are selected.

TIP

To restore updates that have been previously hidden, open Windows Update and click Restore Hidden Updates in the right pane.

Changing how updates work

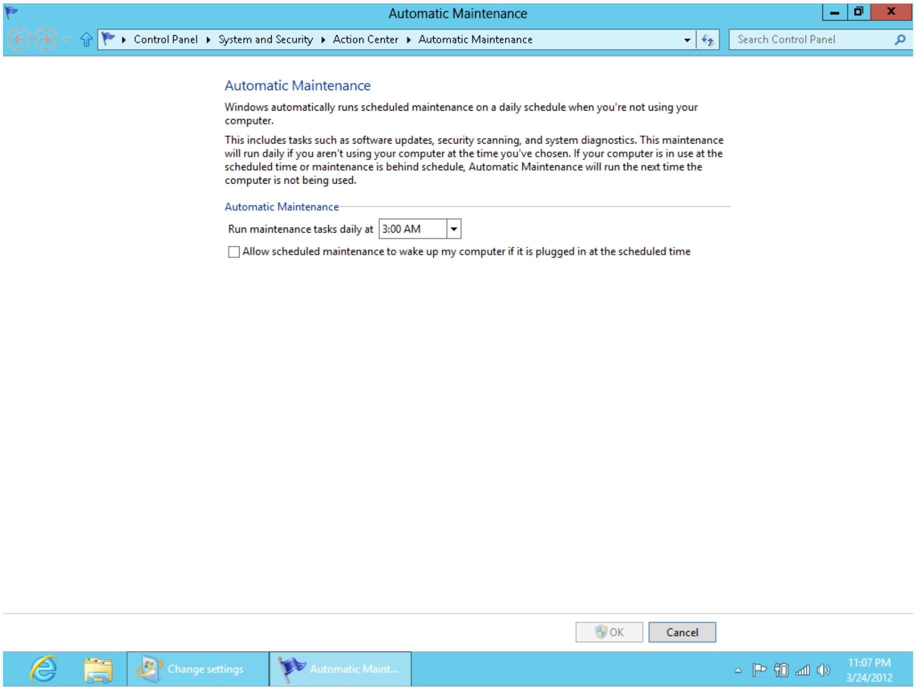
You can modify the times when Windows updates are downloaded to your computer. For example, what if your computer isn't turned on and online at 3:00 in the morning? Will you miss out on something important? Not at all. For one thing, there is no time limit on updates. After an update is posted, it stays posted forever. So you can download and install it at any time.

To change how automatic updating works, use the following steps:

1. In the left column of the Windows Update page, click Change Settings. The Choose Your Windows Update Settings page appears.
2. Click Updates Will Be Automatically Installed During the Maintenance Windows link to see when automatic updates are downloaded. Figure 11.3 shows the preferred (and most secure) time, which has Windows checking for critical updates daily at 3:00 a.m.
3. Use the Run Maintenance Tasks Daily At drop-down list to select a different update time.

FIGURE 11.3

Windows Updates automatically runs at a specific time.


Automatic Maintenance
Control Panel ▸ System and Security ▸ Action Center ▸ Automatic Maintenance
Search Control Panel

Automatic Maintenance

Windows automatically runs scheduled maintenance on a daily schedule when you're not using your computer.

This includes tasks such as software updates, security scanning, and system diagnostics. This maintenance will run daily if you aren't using your computer at the time you've chosen. If your computer is in use at the scheduled time or maintenance is behind schedule, Automatic Maintenance will run the next time the computer is not being used.

Automatic Maintenance

Run maintenance tasks daily at 3:00 AM

☐ Allow scheduled maintenance to wake up my computer if it is plugged in at the scheduled time

If your computer isn't on and online at 3:00 a.m:

- Your computer will check for updates and download them in the background as soon as you do go online. ("In the background" means "without interfering with whatever you want to do yourself.")
- If you shut down the computer before the scheduled time, Windows will offer to check for updates before you shut down. So, you don't have to worry about missing out on anything important.

- You also can click the Allow Scheduled Maintenance To Wake Up My Computer If It Is Plugged In At The Scheduled Time option, which will turn on your computer and download the updates automatically.
- Of course, you're free to choose a different schedule if you prefer, such as weekly at noon. But daily at 3:00 a.m. is fine.

4. Click OK after you make changes to the Automatic Maintenance options and to return to the Change Settings screen.

On the Change Settings windows, you can modify the types of updates that are downloaded. As an alternative to fully automatic updates, you can choose one of the other options shown on the Important Updates drop-down list. For example, you can:

- Have Windows download the updates but ask your permission before actually installing them.
- Alert you to available updates. You can then choose whether you want to download or install them.
- Choose to turn off automatic updating altogether. If you choose that option, the only way to get updates is to click Check For Updates at the left side of the Windows Update page.

By default, important and recommended updates are downloaded and installed. An important update is one that's needed to protect your computer against current Internet threats. Choosing Give Me Recommended Updates The Same Way I Receive Important Updates on the Change Settings screen extends that to less-critical updates that aren't directly related to security. Recommended updates are usually things such as minor bug fixes or improvements to Windows and other Microsoft products.

Click OK after making any changes to your settings, or click Cancel to leave all settings in their original state.

Reviewing and removing updates

The fact that well over 200,000 hardware and software products are available for Windows means that once in a while an update could cause problems with a particular device or program. Typically, you fix that problem by going to the product manufacturer's website and finding out what it recommends. If the manufacturer hasn't fixed the problem yet, and you need immediate access to the device or program, you might want to temporarily remove the conflicting update, especially if it isn't a critical security update.

To review your history of installed updates, follow these steps:

1. Click View Update History in the left column of the Windows Update window.
2. If you need to remove any installed updates, you can do so through the Uninstall A Program item in the Control Panel. Open the Control Panel and click Uninstall A Program.

3. Click View Installed Updates.
4. Right-click the update you want to remove and then click Uninstall.
5. If necessary, you can reinstall the update later by clicking Check For Updates in the left column of the Windows Update page.

TIP

For more information and general troubleshooting, click the help question mark on the right side of the Windows Updates page.

Thwarting Exploits with DEP

Thwarting malware attacks that exploit software vulnerabilities is the most important element of automatic updates. But Windows 8 offers a second way of thwarting such attacks. It's called *Data Execution Prevention* (*DEP*). You don't want to use DEP as an alternative to other techniques described in this part of the book. Rather, you want to use it in addition to other techniques.

Many malware attacks use a technique called *buffer overflow* (or *buffer overrun*) to sneak code (program instructions) into areas of memory that only the operating system (Windows) should be using. Those areas of memory have direct access to everything on your computer. So any bad code that sneaks into that area can do great damage.

More Security Tricks Up Its Sleeve

Some malware techniques rely on well-known memory locations to exploit system vulnerabilities. Windows 8 has a surprise for those programs, too. It does not load essential programs to well-known, predictable locations. Instead, it uses Address Space Layout Randomization (ASLR) to load things in a random location each time you start your computer. So malware writers can't really know in advance where a particular exploit resides in memory, making it much more difficult to exploit those memory addresses.

Data Execution Prevention is a security antidote to such attacks. It monitors programs to make sure they use only safe and appropriate memory locations. If DEP notices a program trying to do anything sneaky, it shuts that program down before it can do any harm.

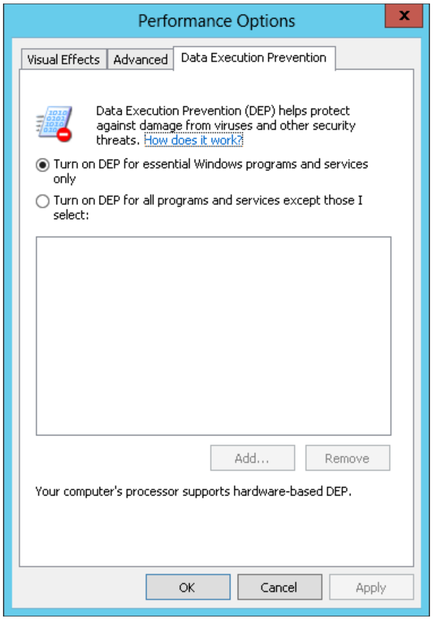
By default, DEP is enabled for essential Windows programs and services only. When coupled with antivirus protection, that setting is usually adequate. You can crank it up to monitor all programs and services. But if you do, you might also have to individually choose programs that are allowed to bypass DEP. Knowing when that's okay may require technical expertise that goes beyond the scope of this book.

To get to options for DEP, follow these steps:

1. Open the System window. Or at the desktop, press Windows+X and choose System. You end up in the System window.
2. In the left column, click Advanced System Settings. That takes you to the System Properties dialog box.
3. Click the Advanced tab, click the Settings button on the Performance heading, and then click the Data Execution Prevention tab. At last, you see the options shown in Figure 11.4.

FIGURE 11.4

Data Execution Prevention options



Data Execution Prevention (DEP) helps protect against damage from viruses and other security threats. How does it work?

● Turn on DEP for essential Windows programs and services only

○ Turn on DEP for all programs and services except those I select:

Your computer's processor supports hardware-based DEP.

4. By default, the option to apply DEP only to essential Windows programs and services is selected. For stronger protection, you can turn on DEP for all programs and services. If you choose that option, DEP may sometimes shut down a program to prevent it from running.

NOTE

Many modern processors offer *NX technologies*, which prevent buffer overflows at the hardware level. When buffer overflows do occur, Windows supports that hardware-based DEP. For processors that don't have hardware DEP, Windows uses DEP software to achieve the same result.

If DEP does shut down a program you need, you have a couple of choices:

- Contact the program manufacturer to find out whether there's a version of the program that runs under DEP.
- If you trust the program, you can add it to the list of programs that are allowed to bypass DEP. To accomplish that, you need to click the Add button and then navigate to and double-click the executable file (typically, such a file has the extension `.exe`) that DEP is shutting down.

Wrap-Up

When it comes to general computer security, the "big three" items are a firewall, malware protection, and automatic updates. Chapters 9, 10, and this chapter cover those topics. But don't forget that running under a standard user account (see Chapter 5) counts, too. Furthermore, you have less technical "social" threats to consider, such as phishing scams and pop-up ads.

The main points for this chapter are as follows:

- Automatic updates provide a quick and simple way to protect your computer against current software exploitation malware.
- Unless you have some compelling reason to do otherwise, you should allow Windows 8 to automatically download and install updates daily.
- Data Execution Prevention (DEP) offers yet another layer of protection against threats that work by sneaking errant code into sensitive parts of system memory.

CHAPTER
12

Personalizing the Windows 8 Interface

IN THIS CHAPTER

- The Windows 8 interface
- Working with tiles
- Working with tile groups
- Customizing the contents of the start screen
- Clearing tile data

The Windows 8 interface presents a clean, streamlined way to interact with your apps, data, and documents, but like the traditional Windows desktop interface, the new interface is just a starting point. You can customize the organization of tiles and tile groups on the Start screen, change the picture on the Lock Screen, and much more.

This chapter explores how you can change all of these elements of the Windows 8 interface and customize it to suit the way you work and play.

Customizing the Start Screen

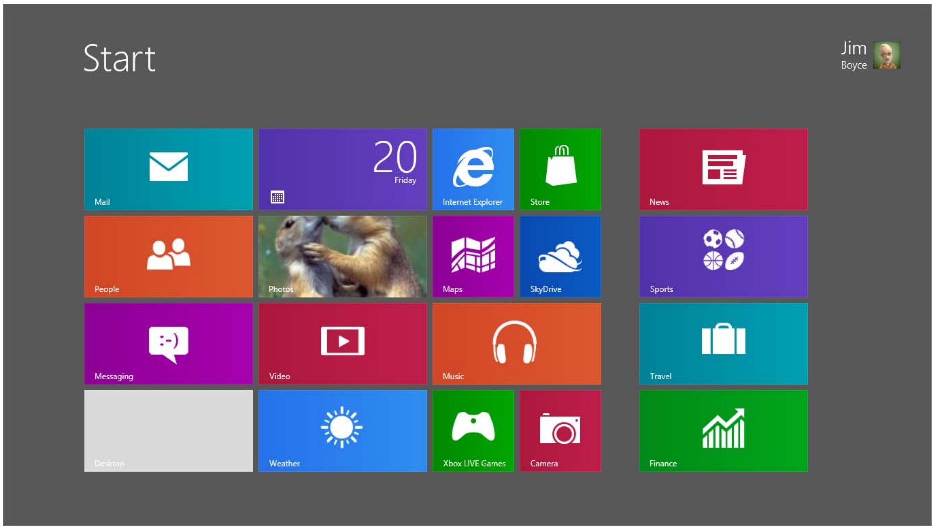
Although the Lock Screen might be the first thing you see when you start Windows 8, you'll certainly spend a lot more time working on the Start screen, so that's where we'll start our tour of the tools and settings you can use to customize the interface.

Rearranging tiles

Figure 12.1 shows a portion of a typical Windows 8 Start screen. As the figure shows, the tiles on the Start screen are grouped. You can rearrange the tiles on the Start screen, moving them within a group, moving them to other groups, or even creating new groups.

FIGURE 12.1

Tiles on the Windows 8 Start screen


Start
Jim
Boyce
Mail
20
Friday
Internet Explorer
Store
News
People
Photos
Maps
SkyDrive
Sports
Messaging
Video
Music
Travel
Desktop
Weather
Xbox LIVE Games
Camera
Finance

Moving tiles within a group is easy. If you are using a touch device, tap and hold the icon until a checkmark appears near the upper-right corner of the tile; then simply drag it into its new position. If you are using a mouse, right-click the tile to make the checkmark appear, and then left-click and drag the tile to its new position.

TIP

If the group where you want to place the tile is not shown on the display, just drag the tile in the direction of the target group. The screen will automatically scroll.

Adding and removing tiles

As you might expect, you can customize the tiles that appear on the Start screen, adding and removing tiles as desired. For example, you might add the documents or websites you use most often, and remove the apps you seldom or never use. The following sections explain how to add and remove tiles from the Start screen as well as the Windows taskbar.

Adding tiles

Apps that you add from the Windows Store are automatically pinned to the Start screen. When you install other apps, Setup generally adds one or more tiles to the Start screen for those, as well.

If you have removed a tile and want to add it back, or need to add a tile for an app that wasn't added automatically, you can easily do so. To add an app using the mouse, right-click the Start screen to show the App Bar, and then click All Apps. With a touch device, slide up from the bottom of the display and then tap All Apps.

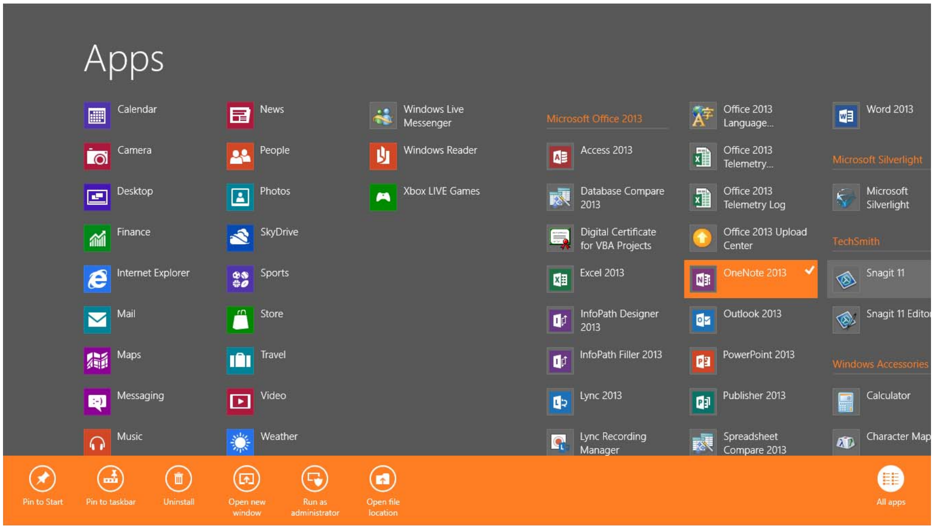
TIP

You can also open Search and click or tap Apps in the results list to show all apps.

Locate the app that you want to add to the Start screen, and then either right-click or swipe down on the icon. When the App Bar appears (see Figure 12.2), click or tap Pin To Start. If you also want to add the app to the Windows taskbar, open the App Bar again for the app and click or tap Pin To Taskbar.

FIGURE 12.2

Pin items to the Start screen using the App Bar.


Apps
Calendar
Camera
Desktop
Finance
Internet Explorer
Mail
Maps
Messaging
Music
News
People
Photos
SkyDrive
Sports
Store
Travel
Video
Weather
Windows Live Messenger
Windows Reader
Xbox LIVE Games
Microsoft Office 2013
Access 2013
Database Compare 2013
Digital Certificate for VBA Projects
Excel 2013
InfoPath Designer 2013
InfoPath Filler 2013
Lync 2013
Lync Recording Manager
Office 2013 Language...
Office 2013 Telemetry...
Office 2013 Telemetry Log
Office 2013 Upload Center
OneNote 2013
Outlook 2013
PowerPoint 2013
Publisher 2013
Spreadsheet Compare 2013
Word 2013
Microsoft Silverlight
Microsoft Silverlight
TechSmith
Snagit 11
Snagit 11 Editor
Windows Accessories
Calculator
Character Map
Pin to Start
Pin to taskbar
Uninstall
Open new window
Run as administrator
Open file location
All apps

TIP

To "swipe down on" a tile or icon, touch it, slide it down slightly, and then release it. A checkmark should appear in the upper-right corner and the App Bar appears.

You add a document to the Start screen in a similar way. Locate the document from the desktop, right-click or tap and hold, and choose Pin To Start. To add a website to the Start screen from the Windows 8 version of Internet Explorer (IE), open the page in IE and then open the App Bar by either right-clicking or sliding up from the bottom of the screen. Then, click or tap the Pin To Start button.

To add a web shortcut from the desktop version of IE, open the page in IE and then choose Tools, Add Site to Start Screen.

Removing tiles

As mentioned earlier, Setup typically adds tiles to the Start screen when you install an app. Over time, the Start screen gets cluttered with apps you probably use seldom, if at all. You can certainly uninstall apps you don't need, but in some cases you might prefer to simply remove the app's tile(s) from the Start screen. For example, maybe it's a utility app that runs in the background that you never need to open.

Removing a tile is easy. If using a mouse, right-click the tile and then in the App Bar, click Unpin From Start. If using a touch device, swipe down on the tile to open the App Bar, and then tap Unpin From Start.

Resizing tiles

Although some tiles have a fixed size, you can change others from small to large or vice-versa. This is particularly handy for live tiles for which you want to provide more space to display their live data. To change the size of a tile, right-click or swipe down on the tile to open the App Bar. Click either Smaller or Larger, as appropriate.

NOTE

In general, tiles for non-Windows 8 apps will be fixed at the smaller, square size.

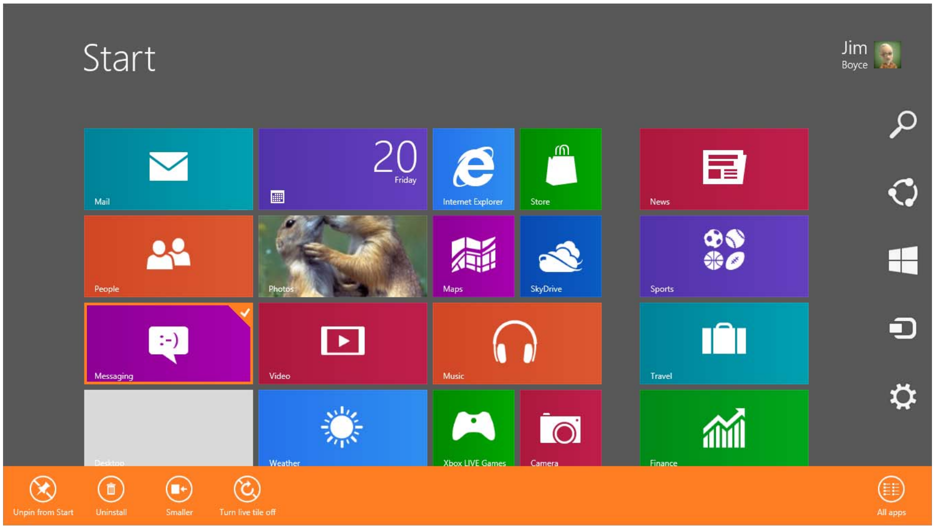
Working with live tiles

In the Windows 8 interface, live tiles are ones that display data dynamically. Examples include the Weather, Mail, and Finance tiles. For example, Finance shows stock price information for stocks that you have added to your watch list.

You can control whether a live tile–capable app shows data or not. For example, if you don't use the Weather app much, you might not want it showing data. To turn live tiles on or off, right-click or swipe down on the tile to open the App Bar. Then, click or tap either Turn Live Tile Off or Turn Live Tile On (see Figure 12.3), depending on the current state of the tile.

FIGURE 12.3

Use the App Bar to turn live tiles on or off.


Start
Jim
Boyce
Mail
20
Friday
Internet Explorer
Store
News
People
Photos
Maps
SkyDrive
Sports
Messaging
Video
Music
Travel
Desktop
Weather
Xbox LIVE Games
Camera
Finance
Unpin from Start
Uninstall
Smaller
Turn live tile off
All apps

Working with groups

You've already seen that the Start screen groups tiles, and that you can move tiles from one group to another. Groups enable you to group together tiles on the Start screen in whatever way makes sense to you. For example, you might group the items that you use the most into one group, with websites or documents in another.

NOTE

In a way, groups on the Start screen are a little like the program groups from Windows 3.*x*, although they naturally look much better now!

The section "Rearranging Tiles" earlier in this chapter explained how to move tiles from one group to another, or within the same group. But there are other actions you can take in regards to groups, including creating new groups and naming them.

Creating groups

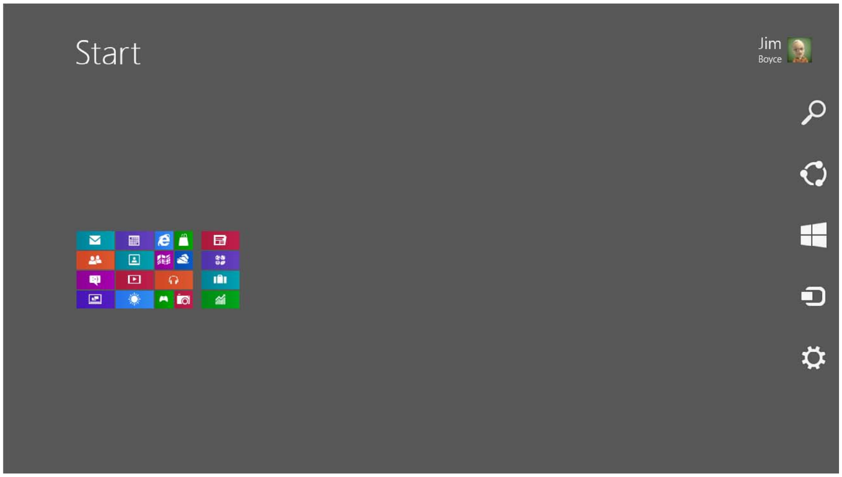
To create a new group, simply drag a tile to the vertical space between two groups, or to the left or right edge of the Start screen. Windows displays a translucent vertical bar to indicate that it is going to create a new group when you release the tile. Release the tile, and then drag other tiles as desired into the group.

Rearranging groups

You can also change the order of groups on the Start screen. To work with a group as a whole, you first need to zoom out to see the entire Start screen. To do so with a mouse, click the Summary View icon at the bottom right of the display. On a touch device, simply pinch the Start screen to zoom out and view the Summary view (see Figure 12.4). With the Start screen at the Summary view, click or tap on a group and then drag it to the desired location.

FIGURE 12.4

Use the Summary view to manage tile groups.



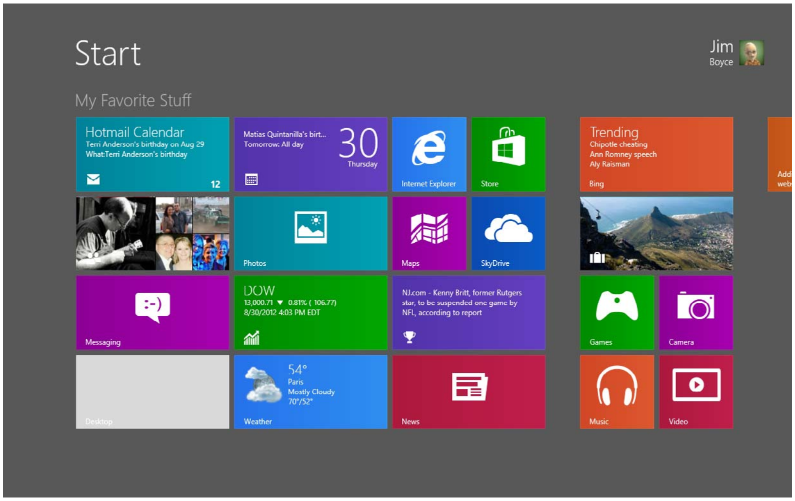
Naming groups

Although groups by default do not have a name, you can assign a name to a group, if desired. This is useful if you have a lot of tiles on the Start screen and want an additional visual cue as to what each group contains.

To name a group, first display the Summary view as described in the previous section. Then, right-click or swipe down on a group to open the App Bar. Click or tap Name Group, type a name in the resulting text box, and then click or tap Name to apply the name. To remove a name, repeat the process and delete the text from the text box; then tap or click Name. Figure 12.5 shows a group with a name.

FIGURE 12.5

You can name tile groups.


Start
Jim
Boyce
My Favorite Stuff
Hotmail Calendar
Terri Anderson's birthday on Aug 29
What:Terri Anderson's birthday
12
Matias Quintanilla's birt...
Tomorrow: All day
30
Thursday
Internet Explorer
Store
Trending
Chipotle cheating
Ann Romney speech
Aly Raisman
Bing
Photos
Maps
SkyDrive
Messaging
DOW
13,000.71 ▼ 0.81% (106.77)
8/30/2012 4:03 PM EDT
NJ.com - Kenny Britt, former Rutgers star, to be suspended one game by NFL, according to report
Games
Camera
Desktop
54°
Paris
Mostly Cloudy
70°/52°
Weather
News
Music
Video

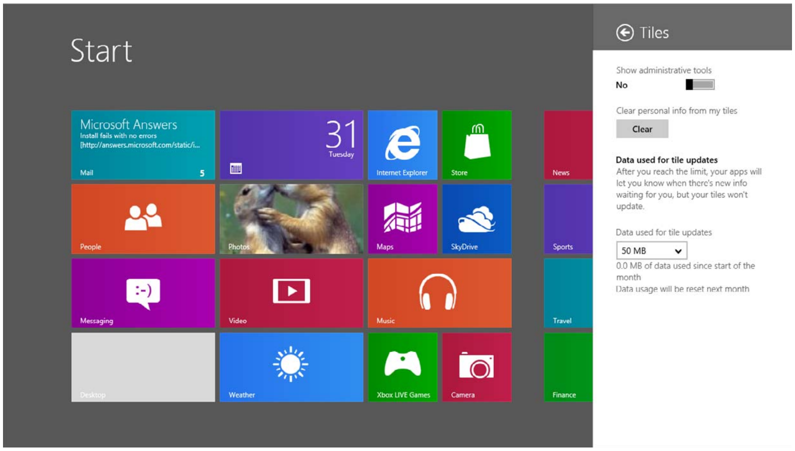
Clearing Live Data

Over time, as you use live tiles to display data, you might want to clear the data the tiles show. For example, if you're working in a public place such as on an airplane, you might not want your data displayed on the Start screen. Windows 8 makes it easy to clear that data.

Display the Start screen, and then open the Charms Bar and click or tap Settings. Click Tiles in the resulting Settings menu, and then click or tap Clear (see Figure 12.6).

FIGURE 12.6

The Tiles menu


Start
Microsoft Answers
Install fails with no errors
[http://answers.microsoft.com/static/i...
Mail
5
31
Tuesday
Internet Explorer
Store
News
People
Photos
Maps
SkyDrive
Sports
Messaging
Video
Music
Travel
Desktop
Weather
Xbox LIVE Games
Camera
Finance
Tiles
Clear

Show administrative tools
No

Clear personal info from my tiles

Data used for tile updates
After you reach the limit, your apps will let you know when there's new info waiting for you, but your tiles won't update.

Data used for tile updates
50 MB
0.0 MB of data used since start of the month
Data usage will be reset next month

Allocating storage for Tile updates

Live tiles display data, and as you might expect, that data needs to be stored somewhere. The more live tiles you use, the more data is created. By default, Windows 8 will store up to 50MB of live tile data, and when that storage is used, your live tiles will let you know there are updates available but won't display them. To increase the amount of storage allocated for live tile data, open the Charms Bar, click or tap Settings, and then click or tap Tiles on the Settings menu. Use the Data Used For Tile Updates drop-down to specify the amount of storage allocated for live tile data.

Adding administrative tools to the Start screen

One final change you might want to make to the Start screen is to add the Windows 8 administrative tools to it. These tools include Performance Monitor, Task Manager, Optimize Drives, and other tools for managing your device. If you use these tools often, or simply want quick access to them, you can add them to the Start screen. To do so, open the Charms Bar, click or tap Settings, click or tap Tiles in the Start Settings menu, and set the Show Administrative Tools option to Yes.

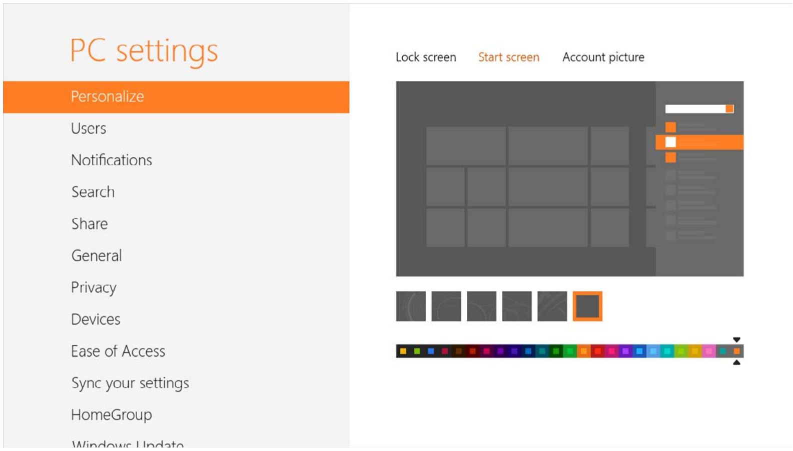
Changing Start Screen Background and Color

Another change you can make to the Start screen is to change the background color and/or choose a background for the Start screen. To change either of these properties, open the Charms Bar, click or tap Settings, and then click or tap Change PC Settings.

In the PC Settings app, click or tap Personalize, and then click or tap Start Screen to display the options shown in Figure 12.7. Choose a background from the options provided, or choose the solid color if you prefer no background image. Use the color selector to choose a color for the Start screen.

FIGURE 12.7

Use the Personalize item to choose color and background image.



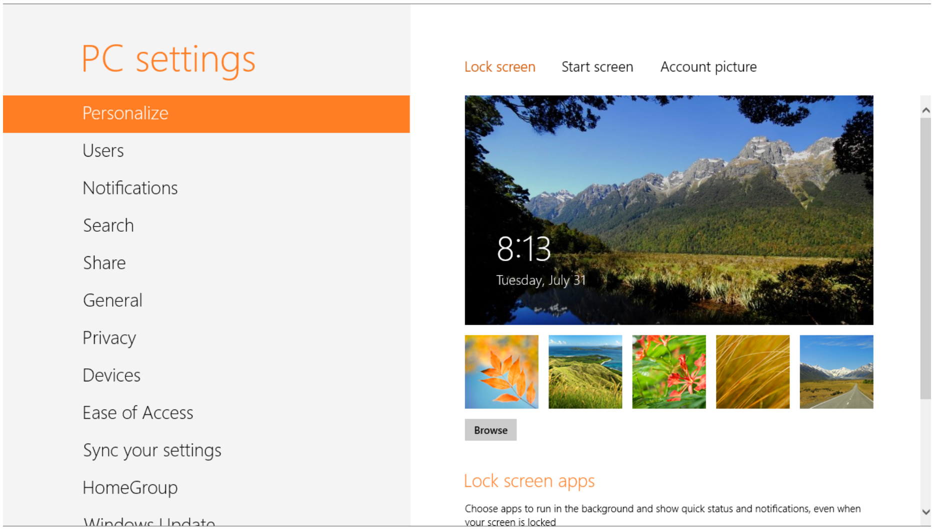
Customizing the Lock Screen

Although you probably don't spend a lot of time on the Lock Screen, you might still want to customize the way the Lock Screen looks and functions. For example, maybe you want to change the picture displayed on the Lock Screen. Or maybe you want to choose the apps that run in the background and display information on the Lock Screen (such as the Mail app showing how many unread e-mails you have). Only apps written to do so can display status on the Lock Screen. Depending on their design, some can display basic information, while others can display detailed status. The Calendar app is an example of an app that can display detailed status.

To customize the Lock Screen, open the Charms Bar, click or tap Settings, and then click or tap Change PC Settings. In the PC Settings app, click or tap Personalize and then click or tap Lock Screen to display the options shown in Figure 12.8.

FIGURE 12.8

Use the Personalize item to set Lock Screen options.


PC settings
Personalize
Users
Notifications
Search
Share
General
Privacy
Devices
Ease of Access
Sync your settings
HomeGroup
Windows Update
Lock screen
Start screen
Account picture
8:13
Tuesday, July 31
Browse
Lock screen apps

Choose apps to run in the background and show quick status and notifications, even when your screen is locked

Windows 8 provides a small number of stock images from which you can choose for the Lock Screen. Just click on an image to set it as the background for the Lock Screen, or click Browse to choose a photo or other image stored on your device.

The Lock Screen Apps section of the Lock Screen page lets you choose which apps display status updates on the Lock Screen. By default, the Messaging, Mail, and Calendar apps are selected to display their status, with the Calendar app set to display detailed status. To add an app, click or tap one of the available boxes (with the + sign in the middle) and choose an app from the resulting pop-up menu. To change which app displays detailed status, click or tap the detailed status icon and choose the desired app. If you prefer not to have detailed status on the Lock Screen, click or tap Don't Show Detailed Status On The Lock Screen.

Changing Your Account Picture

One final change you'll probably want to make that affects both the Lock Screen and the Start screen is your account picture. For example, maybe you want to use your Xbox avatar as your account picture.

NOTE

If you have linked your Microsoft account (formerly Windows Live ID) to your Windows account, the picture associated with your Microsoft account is used automatically for your account picture. If you change the account picture in Windows 8, that change also updates your Windows account picture.

After you have the image you want to use as your account picture, open the Charms Bar, click or tap Settings, and click or tap Change PC Settings to open the PC Settings app. Click or tap Personalize, and then click or tap Account Picture. The Account Picture page shows your currently assigned picture, if any. To choose a different one, click or tap Browse, choose an image, and click or tap Choose Image to apply the new image.

TIP

If you want to use your Xbox avatar for your Microsoft or Windows account image, go to `http://live.xbox.com/en-US/AvatarEditor`, click Gamer Picture, and then create and save your gamer pic. After your gamer pic appears beside your account name on the Xbox.com site, you can right-click the image and choose Save Background As to save the image to your computer.

Wrap-Up

In previous versions of Windows, you had a considerable amount of control over what the Windows interface looked like, and to a lesser degree, over how it functioned. With the introduction of the Windows 8 interface, you have fewer options for customizing the interface because of the nature of that interface — it is more streamlined, so there is less to customize. Even so, Windows 8 gives you a fair amount of flexibility over the position and grouping of tiles on the Start screen, its background and color, and other properties. You learned how to change those properties in this chapter.

The Windows desktop hasn't gone away, however, and you'll no doubt want to do at least a little customization of the desktop interface. To learn more about the available customization options, check out Chapter 13, "Personalizing the Desktop."

CHAPTER

13

Personalizing the Desktop

IN THIS CHAPTER

Personalizing your screen, mouse, and keyboard

Personalizing your taskbar

Using Windows gadgets

On a touch device, the Start screen is probably where you'll spend most of your time. On a more traditional PC, however, the Windows desktop is probably your main workplace. Or maybe "play place," depending on how you use your computer. But the point is, your Windows desktop is similar to a real, wooden desktop. It's where you keep all the stuff you're using right now — the stuff that's open. Your hard disk and its folders, by comparison, are more like your filing cabinet, where you keep stuff you might need in the future.

We all like to set up our own desktop and work environment in unique ways. What works best for one person isn't necessarily great for someone else. Fortunately, the way things look and work on your Windows 8 desktop aren't set in stone. You can personalize your desktop and features in a variety of ways to make them look and work the way you like. That's what this chapter is all about — having your Windows environment set up your way.

Most of the options described in this chapter apply only to the user account you're currently logged in to, so any changes you make to your own desktop apply only to you (assuming that you're logged in to your own user account). This means that all users of a computer can have their settings just the way they want them without stepping on each others' toes.

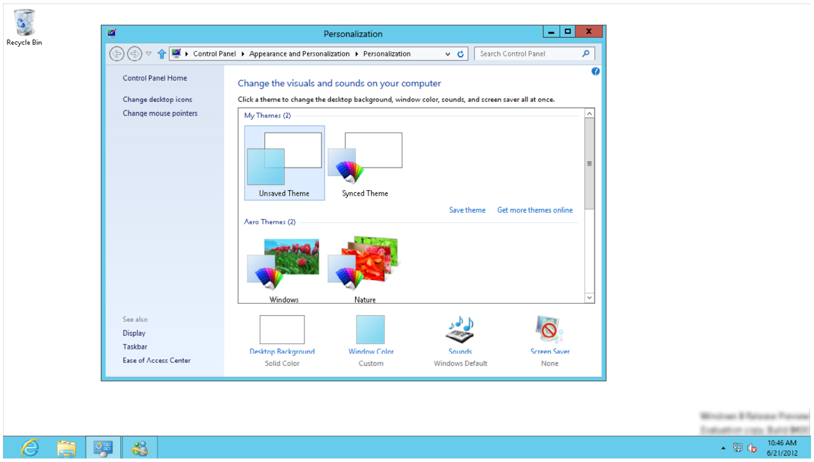
Using the Personalization Page

Many options for personalizing the look and feel of Windows 8 are on the Personalization page, shown in Figure 13.1. As with most aspects of Windows 8, there are many ways to get to the Personalization page. Use whichever is most convenient for you at the moment:

- Right-click the desktop and choose Personalize.
- Press ⊞, type **personalize**, click Settings, and click Personalize Your Computer.
- Open the Control Panel and choose Appearance And Personalization ➪ Personalization.

FIGURE 13.1

Personalization page



Change the visuals and sounds on your computer

Click a theme to change the desktop background, window color, sounds, and screen saver all at once.

Recycle Bin
Personalization
Control Panel
Appearance and Personalization
Personalization
Search Control Panel
Control Panel Home
Change desktop icons
Change mouse pointers
My Themes (2)
Unsaved Theme
Synced Theme
Save theme
Get more themes online
Aero Themes (2)
Windows
Nature
See also
Display
Taskbar
Ease of Access Center
Desktop Background
Solid Color
Window Color
Custom
Sounds
Windows Default
Screen Saver
None
10:46 AM
6/21/2012

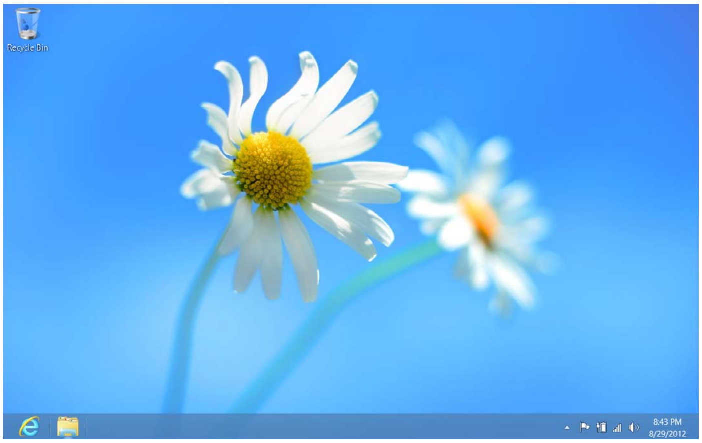
The sections that follow look at how you can use the various options on the page to fine-tune the look and feel of Windows 8 on your screen.

Choosing a theme

A theme is a collection of appearance settings that determine how things look on your screen. For example, Figure 13.2 shows how Windows 8 looks with the default theme selected. Figure 13.3 shows how it looks with the Duncan Lawler Southwest Sandstone theme downloaded from the Microsoft website.

FIGURE 13.2

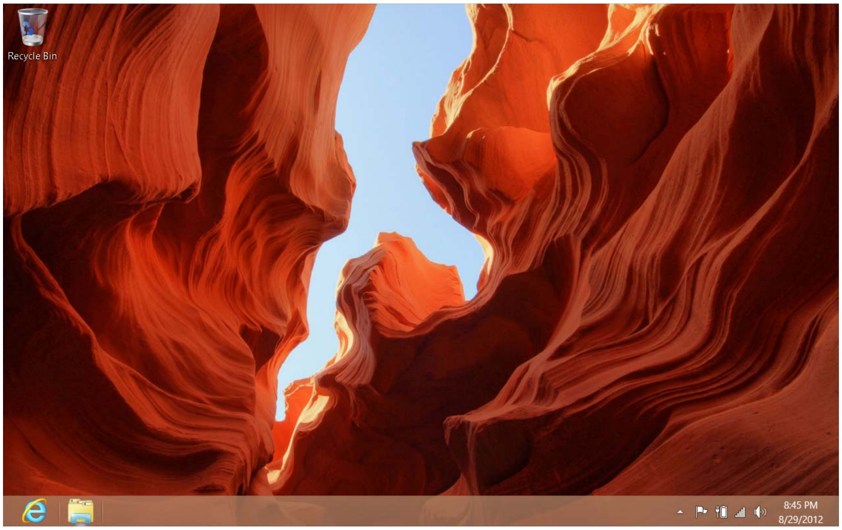
Windows 8 theme



Recycle Bin
8:43 PM
8/29/2012

FIGURE 13.3

Southwest Sandstone theme



To choose a theme, open the Personalization window from the Control Panel. You see a selection of themes from which to choose. A good way to personalize your screen is to choose a theme that looks most like how you'd like your screen to look. You can certainly modify it to your preferences or even create your own custom themes. Using a predefined theme that has many of the characteristics you like, however, is a good way to get started.

To try a theme, just click the theme in the Personalization page. The theme is applied to your desktop. If you don't like the results, just click another theme or your previous theme.

Feel free to try out as many themes as you like. If you plan to further customize things, click Save Theme. Then enter a name for the theme and click Save.

TIP

You can create as many custom themes as you like. Just remember to give each one a unique name when you save it.

NOTE

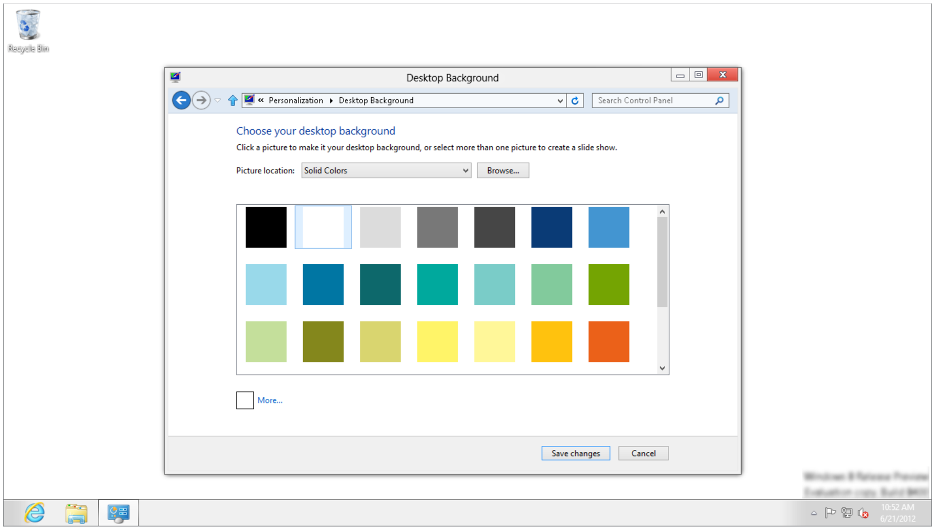
The Aero Glass interface introduced in Windows Vista is no longer supported in Windows 8.

Personalizing your desktop background

You can *wallpaper* your desktop with any picture or color you like. In the Personalization window, click Desktop Background to open the Desktop Background page, shown in Figure 13.4.

FIGURE 13.4

The Desktop Background page



Choose your desktop background

Click a picture to make it your desktop background, or select more than one picture to create a slide show.

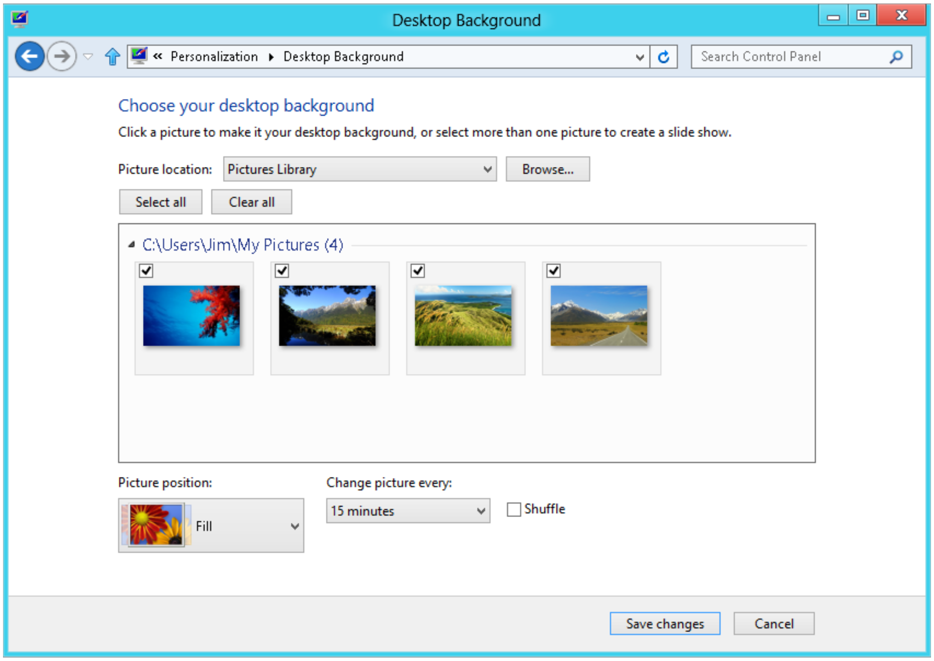
Picture location: Solid Colors

Recycle Bin
Desktop Background
« Personalization ▸ Desktop Background
Search Control Panel
Browse...
More...
Save changes
Cancel
10:52 AM
6/21/2012

Click the drop-down button and choose Solid Colors to choose a solid-color background for the desktop, or choose Pictures Library to view pictures from your own Pictures folder (see Figure 13.5) and from the shared Public Pictures folder. Of course, if these folders are empty or don't contain any compatible picture types, you won't see any pictures after making your selection. After you choose a category, point to or click any picture to see it applied as your desktop background.

FIGURE 13.5

Choose a desktop background.


Desktop Background
« Personalization ▸ Desktop Background
Search Control Panel
Browse...
Select all
Clear all
C:\Users\Jim\My Pictures (4)
☑
☑
☑
☑
Save changes
Cancel

Choose your desktop background

Click a picture to make it your desktop background, or select more than one picture to create a slide show.

Picture location: Pictures Library

Picture position: Fill

Change picture every: 15 minutes

☐ Shuffle

The Top Rated Photos option lets you choose from photos in your own Pictures folder or in the Public Pictures folder that have a rating of 4 or higher.

If you have pictures in some folder other than the Pictures folder for your user account or the Public Pictures folder, click Browse. Navigate to the folder that contains those pictures. Then click (or double-click) the picture you want to use as your desktop background. All pictures from that folder will appear in the Desktop Background window. Click whatever picture you want to use.

If the desktop is covered, hover the mouse over the Show Desktop button at the lower-right corner of the screen to make all windows invisible and show the desktop. Try out different pictures until you find one you like.

You might have noticed that you can choose more than one picture for your desktop. The option Change Picture Every lets you choose how often Windows displays a new desktop picture. Enable the Shuffle option if you want the photos to be shown randomly from the selected group.

Try the options under Picture Position to view it in different ways. The options have little or no effect on large pictures. But if you choose a small picture of your own, the Tile option shows it repeatedly, like tiles. The Center option shows it centered on the screen. If you choose the Center option, you can click Change Background Color to color the desktop surrounding the picture.

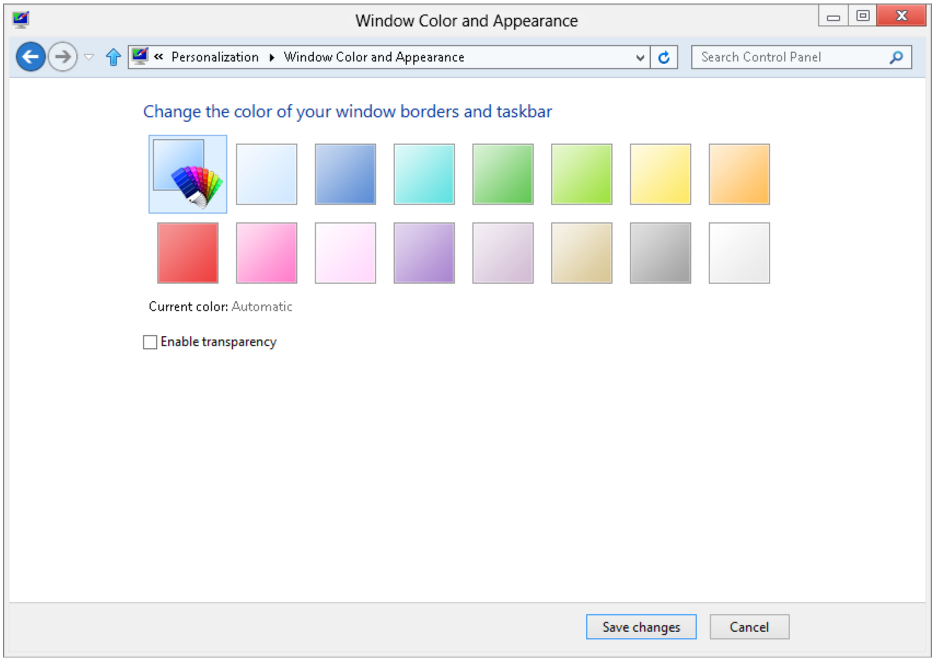
If you don't want a picture on your desktop, choose Solid Colors from the drop-down list. Then click whatever color you like, or click More for a wider selection of colors. When you've found and chosen a picture or color you like, click Save Changes.

Personalizing your color scheme

To choose a basic color scheme for your screen and selected theme, click Window Color in the Personalization window (see Figure 13.6).

FIGURE 13.6

Change your color scheme.



Window Color and Appearance
« Personalization ▸ Window Color and Appearance
Search Control Panel

Change the color of your window borders and taskbar

Current color: Automatic

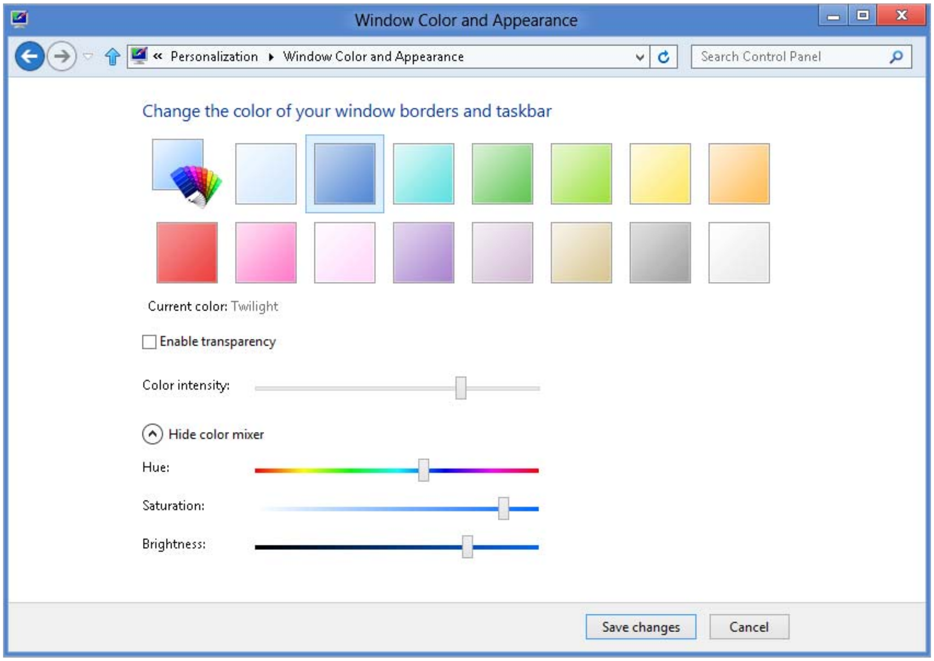
☐ Enable transparency

Most of the options are self-explanatory. Click any color sample to apply that color to your windows. Use the Color Intensity slider to adjust the amount of color used.

If you want to create your own colors, click any color selection other than Automatic, then click Show Color Mixer to see the additional sliders shown in Figure 13.7. You can use those to create your own color.

FIGURE 13.7

Color mixer sliders



Window Color and Appearance
« Personalization ▸ Window Color and Appearance
Search Control Panel
Save changes
Cancel

Change the color of your window borders and taskbar

Current color: Twilight

☐ Enable transparency

Color intensity:

Hide color mixer

Hue:

Saturation:

Brightness:

Before you start creating a color, you might find it useful to drag the Intensity slider to the middle or far right end of the bar and deselect the Enable Transparency check box. Also, drag the Saturation and Brightness sliders to the middle. Doing so will make it easier to see your color selection on the window's border.

Drag the Hue slider along the rainbow bar until you find a color you like. Move the Saturation slider to adjust, deepen, or fade your selected color. Use the Brightness slider to brighten or darken the color. Just keep playing around with things until you get a color you like.

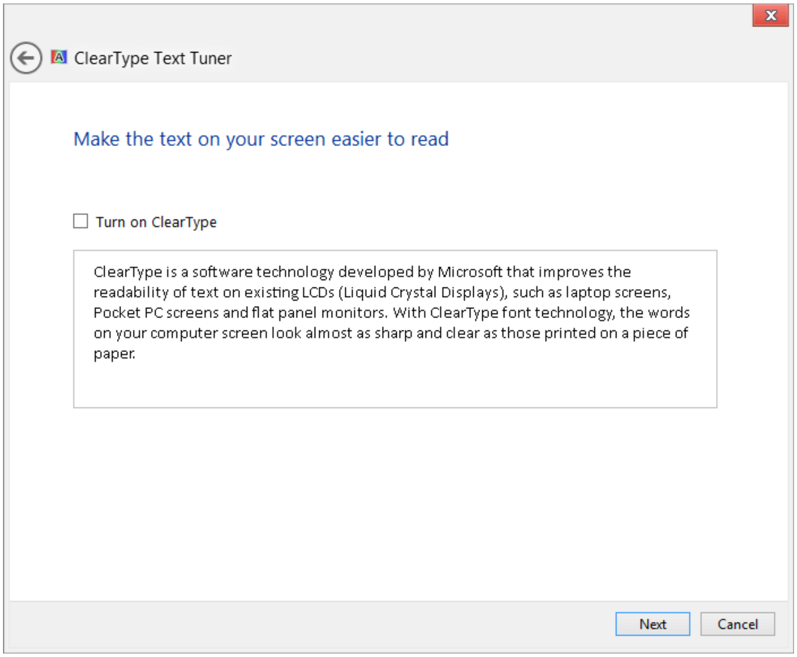
Making text sharper with ClearType

ClearType is a technology that makes fonts look clearer and smoother on a display. ClearType is particularly effective for LCD displays but can have some effect on CRT displays as well. Windows 8 supports ClearType.

To adjust ClearType on your Windows 8 computer, first open the Control Panel. Then click Display and click Adjust ClearType Text. The ClearType Text Tuner appears (see Figure 13.8).

FIGURE 13.8

ClearType Text Tuner



Make the text on your screen easier to read

☐ Turn on ClearType

ClearType is a software technology developed by Microsoft that improves the readability of text on existing LCDs (Liquid Crystal Displays), such as laptop screens, Pocket PC screens and flat panel monitors. With ClearType font technology, the words on your computer screen look almost as sharp and clear as those printed on a piece of paper.

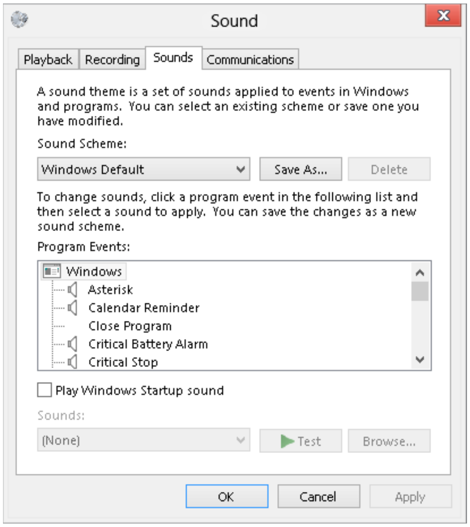
The ClearType Text Tuner is a wizard that steps you through a couple of settings to fine-tune font display on your computer. Select the Turn On ClearType check box and then click Next. Windows 8 checks your computer's display resolution and offers to change resolution to the display native resolution or keep the current resolution. Choose the desired option and click Next. Windows 8 then displays four pages with different text samples, prompting you to choose the ones that look the best to you. Click Finish when you're satisfied with your selections.

Personalizing sound effects

You might have noticed some little beeps and whistles as you do things in Windows 8. Those are called *sound effects*, and you can customize those from the Personalization window. Just click Sounds in the Personalization window to open the Windows Sound dialog box, shown in Figure 13.9.

FIGURE 13.9

Windows Sound dialog box


Sound
Playback
Recording
Sounds
Communications
Save As...
Delete
Program Events:
Windows
Asterisk
Calendar Reminder
Close Program
Critical Battery Alarm
Critical Stop
Test
Browse...
OK
Cancel
Apply

A sound theme is a set of sounds applied to events in Windows and programs. You can select an existing scheme or save one you have modified.

Sound Scheme: Windows Default

To change sounds, click a program event in the following list and then select a sound to apply. You can save the changes as a new sound scheme.

☐ Play Windows Startup sound

Sounds: (None)

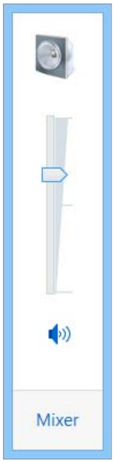
If you don’t want to assign sound effects one at a time, you can choose a predefined sound effects scheme from the Sound Scheme drop-down list. Choose No Sounds if you don’t want any sound effects.

The Program Events list shows different events to which you can assign sounds. Items that have a speaker icon to the left already have a sound effect associated with them. To hear one, click any program event that shows a speaker icon. The Sounds drop-down menu below the list shows the filename in which the sound effect is stored. Click the Play button to the right of the sound effect name to hear that sound effect.

Sound effects play only when your computer has a sound card with speakers plugged into the correct jack. If the speakers have their own power switch, they must be turned on. Likewise, if the speakers have their own volume control, the volume must be turned up high enough. And if the speakers have a Mute button, it must be turned off. Likewise, the volume control in the Notification area must have its volume set to a level you can hear and must not be muted, as in Figure 13.10.

FIGURE 13.10

Windows volume control



In the Windows Sound dialog box, you can assign any sound effect you like to any program event. First, click the program event to which you would like to assign or change a sound effect. Then click the drop-down button under Sounds to see a list of built-in sound effects. Click the sound effect you'd like to assign. Then click the Play button to hear that sound effect.

If you have your own sound effect to assign to a program event, click the Browse button and navigate to the folder that contains your sound effects. Then double-click the sound effect you want to assign to the program event.

If you change the sound effects associated with program events, you'll want to save all that work as your own sound scheme. Click the Save As button and give the scheme a name.

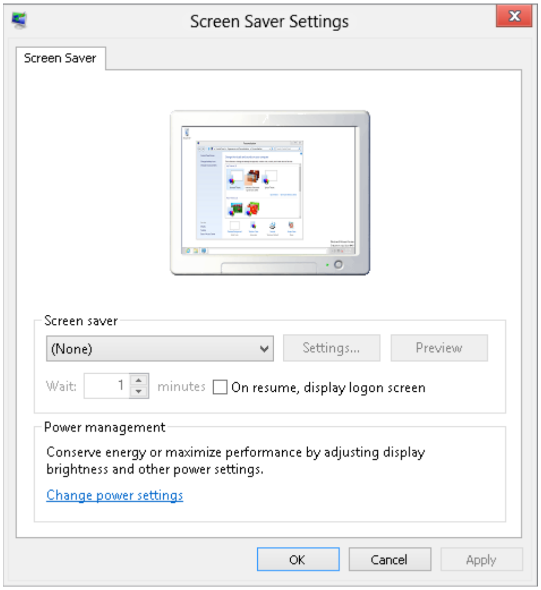
Personalizing your screen saver

A screen saver is a moving picture or pattern that fills the screen after a period of inactivity. The name "screen saver" harkens back to the olden days when leaving a fixed image on the screen for too long a time could cause permanent damage to the screen. This type of burn-in can still be a problem with CRT displays but isn't a problem with LCD displays. So a screen saver is typically optional nowadays. Still, it's a nice way to have your screen do something entertaining when the computer is on but nobody is using it. Plus, it can be a way to protect your computer from prying eyes when you walk away from it. Better still, lock your workstation before you leave.

In the Personalization window, click Screen Saver. The Screen Saver Settings dialog box shown in Figure 13.11 opens. Click the drop-down button to see a list of screen savers from which you can choose. Click any name in that list to get a sneak peek at how it will look if you apply it.

FIGURE 13.11

Screen Saver Settings dialog box



Screen saver: (None)

Wait: 1 minutes ☐ On resume, display logon screen

Power management

Conserve energy or maximize performance by adjusting display brightness and other power settings.

Change power settings

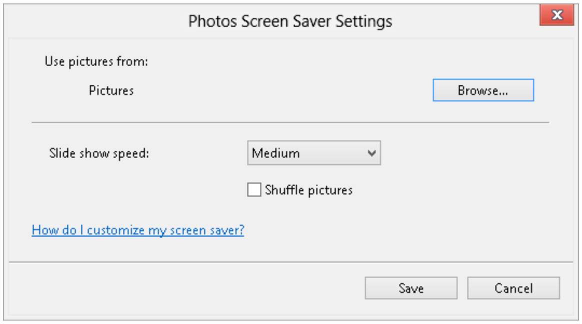
Some screen savers are customizable. Click the Settings button to see whether the screen saver you selected has optional settings you can change. If it does, you'll see those options in a dialog box. Choose whatever options look interesting.

If you have pictures in Photo Gallery, choose Photos from the drop-down button. The screen saver will be a slide show of pictures from your gallery. If you choose Photos from the drop-down list, you can also click the Settings button to see the options shown in Figure 13.12.

For the goods on photos and Photo Gallery, drop by Chapter 23, "Working with Pictures."

FIGURE 13.12

Photo slide show options



As you can see in Figure 13.12, the default setting is for the screen saver to show all pictures and videos from your Pictures library, which includes your own Pictures folder and the Public Pictures folder. You can click Browse to choose a different location, if desired.

Use the Slide Show Speed drop-down button to choose the slide show speed, and choose the Shuffle Pictures option to have Windows randomize the photo selection. Click Save after making your choices.

Regardless of which screen saver and settings you choose, the small preview window in the dialog box shows you how it will look. For a larger view, click the Preview button. Your selected screen saver will play full screen. To make it stop, just move your mouse.

After you've chosen your screen saver, specify how many minutes of inactivity are required before the screen saver starts playing. A period of inactivity means that nobody has touched the mouse or keyboard. So if you set the Wait option to five minutes, the screen saver kicks in after the computer has been unused for five minutes. The screen saver plays until someone moves the mouse or presses a key on the keyboard.

Choosing On Resume, Display Logon Screen causes the screen saver to show the login page rather than your desktop when someone moves the mouse. If you're using a password-protected user account, showing the login page prevents that other person from accessing your desktop. It also means that when *you* want to start using the computer again, you have to enter your password to get back to your desktop. Your programs will still be running so this isn't the same as logging out and logging back in again.

The screen saver won't kick in at all if your power options are set to turn off the monitor before the screen saver kicks in. The Change Power Settings link in the dialog box lets you check, and optionally change, when the monitor goes off.

For example, the Power Save plan turns off the monitor after 20 minutes. If you set the screen saver to kick in after 21 or more minutes, you'll never see the screen saver because the monitor will be off. If you prefer the screen saver to an empty screen, make sure to set the screen saver timeout to a shorter time period than your screen power-off setting.

See "The Power Settings" in Chapter 47, "Performance Tuning Your System," for more information on using power options.

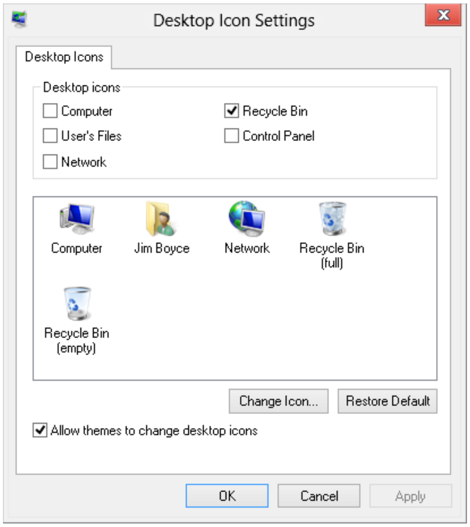
When you're happy with your screen saver selections, click OK. Remember that the screen saver won't actually play until you've left the computer alone and untouched for the number of minutes you specified in the Wait box on the Screen Saver Settings dialog box.

Personalizing desktop icons

In the left column of the Personalization window, you see a link titled Change Desktop Icons. Click that link to see the dialog box shown in Figure 13.13. Select the check boxes for any icons you want to see on your desktop. Clear the check box for any icon you don't want to see. As always, choosing icons is purely a matter of personal taste. Also, you can change the icons you see on your desktop at any time. Click OK after choosing the icons you want to see.

FIGURE 13.13

Desktop icon settings



Desktop Icon Settings

Desktop Icons

Desktop icons

☐ Computer
☐ User's Files
☐ Network
☑ Recycle Bin
☐ Control Panel

☑ Allow themes to change desktop icons

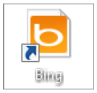
Creating your own desktop icons

The Desktop Icons Settings dialog box shows only the few desktop icons built into Windows 8. Many programs you install create other desktop icons. You're also free to create your own desktop icons. Most desktop icons are actually just *shortcuts* to other places or programs.

Shortcut icons are unique in a couple of ways. For one, they show a little curved arrow like the example in Figure 13.14. For another, deleting a shortcut icon has no effect on the item that the shortcut opens. Instead, deleting a shortcut icon deletes only the icon. The program or folder to which the icon referred still exists. You can still open that item through a non-shortcut method.

FIGURE 13.14

Sample shortcut icon



If you often go through a series of clicks or steps to open some item, creating a desktop shortcut will make opening that item quicker and easier. Get to the icon you normally click (or double-click) to open a program, folder, or document. Then right-click that icon and choose Send To ➪ Desktop (Create Shortcut).

Sizing, arranging, showing, and hiding desktop icons

You can size and arrange desktop icons as you see fit. First, minimize or close all open program windows so that you can see the entire desktop. Then right-click any empty area on the desktop and hover the mouse over the View menu.

The View submenu, shown in Figure 13.15, contains several options for arranging icons. An item on that menu that has a checkmark is currently selected and active. An item without a checkmark is deselected and inactive. Clicking an item selects it if it's not already selected, or deselects it if it is selected. Here's what each option does:

- **Large Icons:** Shows desktop icons at a large size.
- **Medium Icons:** Shows desktop icons at a medium size.
- **Small Icons:** Shows desktop icons at a smaller size, similar to earlier Windows versions.

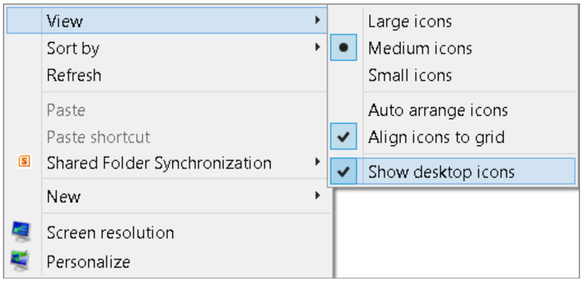
TIP

If your mouse has a wheel, you can make desktop icons almost any size by holding down the Ctrl key as you spin the mouse wheel.

- **Auto Arrange Icons:** Choosing this option keeps icons neatly arranged near the left side of the desktop. If you clear this option, you can put desktop icons wherever you like. Just drag any icon to wherever you want to put it on the desktop.
- **Align Icons to Grid:** Choosing this option keeps icons aligned to an invisible grid, to make the spacing between them equal.
- **Show Desktop Icons:** If this option is selected (checked), desktop icons are visible. Clearing this option makes the desktop icons invisible. It doesn't delete them, however. They'll come back into view when you choose this option again.

FIGURE 13.15

View submenu


View
Sort by
Refresh
Paste
Paste shortcut
Shared Folder Synchronization
New
Screen resolution
Personalize
Large icons
● Medium icons
Small icons
Auto arrange icons
✓ Align icons to grid
✓ Show desktop icons

The Sort By option on the desktop shortcut menu lets you quickly sort icons by name, size, file extension, or date modified. Regardless of which option you choose, built-in icons are always listed first, followed by your own custom icons in whatever order you specified.

The remaining options are similar to their counterparts in folders. The Refresh option ensures that icons on the desktop are up-to-date with changes you may have made elsewhere in the system. If you accidentally delete a shortcut icon, you can choose Undo Delete (or press Ctrl+Z) to bring it back. The New option lets you create a new folder or document on the desktop. Personalize opens the Personalization page (refer to Figure 13.1).

Customizing icons

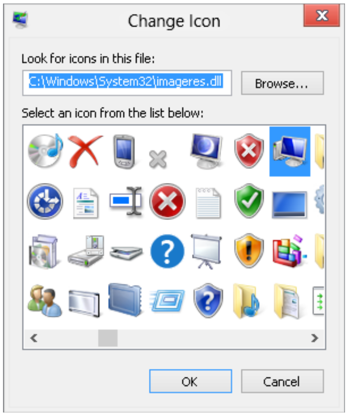
To change a built-in icon, open the Desktop Icon Settings dialog box, shown previously in Figure 13.13. Then click the icon you want to customize, and click Change Icon. To change the appearance of a shortcut icon, right-click it and choose Properties ➪ Change Icon. The Change Icon dialog box opens, displaying possible alternative icons. Figure 13.16 shows a general example.

NOTE

Not all programs offer optional icons. If the Change Icon button is disabled, that means you can't change that particular icon.

FIGURE 13.16

Change Icon dialog box



Look for icons in this file: C:\Windows\System32\imageres.dll

If you have your own `.ico` files and would prefer to use one of those, click the Browse button in the Change Icon dialog box. Navigate to the folder that contains the `.ico` file and choose the icon you want to use. Note that some `.dll` and `.exe` files also contain icons you can use.

TIP

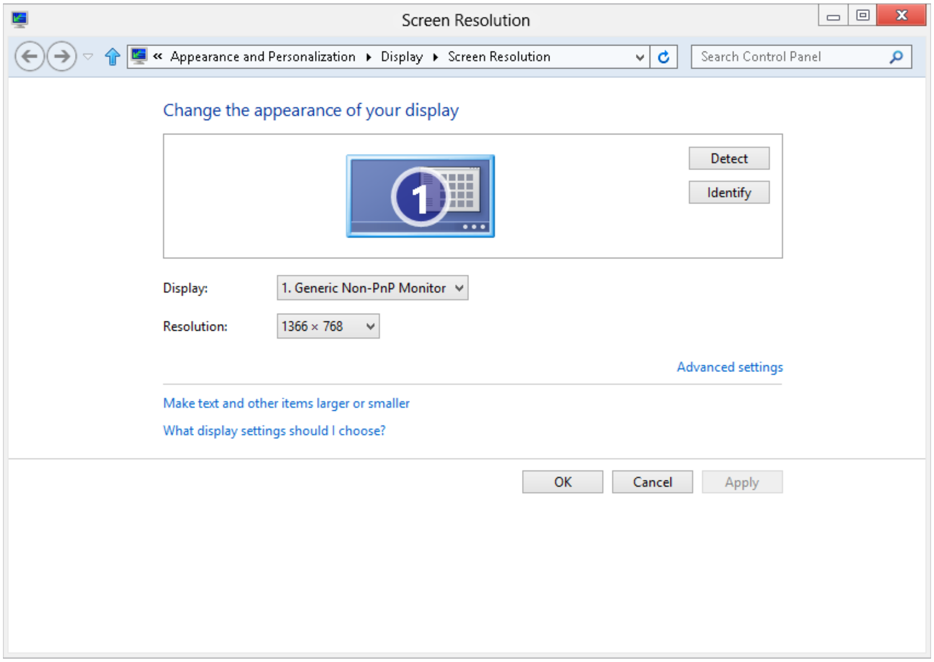
To explore programs that let you create your own icon pictures, search the web for **icon maker**. To find pre-made icons that you can download, search the web using the keywords **download Windows icons**.

Choosing a screen resolution

One of the changes you might want to make in Windows is to adjust your screen resolution because your screen resolution determines how much stuff can fit on your screen. Resolution is measured in *pixels*, with each pixel representing a tiny, lighted dot on the screen. The pixels are too small to see individually. But suffice it to say that the higher the resolution, the smaller everything looks, and the more stuff you can get on the screen. To choose a resolution, right-click the desktop and choose Screen Resolution. Doing so opens the Screen Resolution page shown in Figure 13.17.

FIGURE 13.17

Screen Resolution page



Screen Resolution
« Appearance and Personalization ▸ Display ▸ Screen Resolution
Search Control Panel
Detect
Identify
1
Advanced settings
Make text and other items larger or smaller
What display settings should I choose?
OK
Cancel
Apply

Change the appearance of your display

Display: 1. Generic Non-PnP Monitor

Resolution: 1366 × 768

There is no right or wrong setting for the screen resolution. A high resolution is good because you can see more stuff on your screen. But a high resolution isn't good if things are so small on your screen that you can't see them. On the Screen Resolutions page, click the Resolution drop-down list and then move the slider from one resolution to the next. As you move the slider, you can see a sample of the *aspect ratio* of the current selection. You can't really judge how small things will look on your screen as you move the slider, so it may take a little trial and error to get things just right. But let's stop a second to talk about that "aspect ratio" term here.

There was a time when all computer monitors had a 4:3 aspect ratio, which meant that for every 4 pixels of width, you got 3 pixels of height. These days, you'll come across other aspect ratios including 5:4 and the 16:9 ratio found on widescreen TVs. There are some others, too. You can check the manual that came with your monitor or notebook computer for your screen's exact aspect ratio, or just choose a resolution that looks good on your screen (and is supported by the computer's video adapter). Table 13-1 lists some common aspect ratios and resolutions that fit them.

Other Ways to Size Onscreen Elements

The resolution you choose sets only a basic default size for items on the screen. There are countless other ways to adjust the size of text, icons, and pictures on your screen, and they work no matter what resolution you choose. For example, holding down the Ctrl button while spinning your mouse wheel affects icon size. In Internet Explorer, you can click the Page button and choose Zoom or Text size to change the size of pictures and text on your screen.

Many programs have a View option in their menus that lets you zoom in and out of things to make them larger or smaller. DPI scaling and the Accessibility Settings described later in this chapter offer many options for making items larger and easier to see onscreen.

TABLE 13-1: Common Aspect Ratios and Resolutions

Aspect Ratio	Resolutions that Fit
4:3	800 × 600, 1024 × 768, 1152 × 864, 1600 × 1200
5:4	1280 × 1024, 1600 × 1280
16:9	1088 × 612, 1280 × 720, 1900 × 1080

So the trick here is to move the slider to a resolution (for example, 1024 × 768) and then click the Apply button. The new resolution is applied to your screen. If the screen goes blank, don't panic: You just chose a setting that won't work. The setting will be undone automatically in about 15 seconds and everything will be okay again. To try a different resolution, move the slider to another setting and click Apply again. If you find a setting you like, you can click OK and be done with it.

Using multiple monitors

Windows 8 supports the use of multiple monitors in a variety of configurations. In many cases, adding a second monitor is a simple matter of connecting to the external monitor and turning it on. If the display supports Extended Display Identification Data (EDID), Windows will detect it and adjust the resolution automatically.

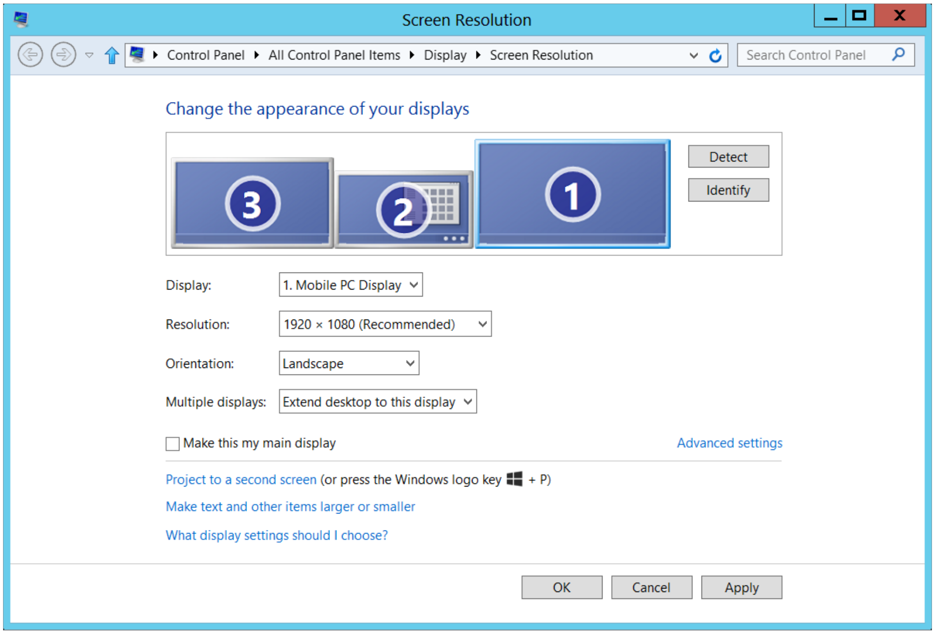
If the external monitor is a television set, you may need to connect, turn on the TV, and then use the Input Select or TV/Video button on the TV or remote control to select the external input (often shown as AV1, PC, or Component on the TV screen). You can also add multiple video cards to the PC and connect a monitor to each one. Many newer display adapters support multiple monitors, so you can use a single adapter to drive more than one monitor.

After you connect to an external monitor and configure it to show input from the plug to which you connected the computer (if necessary), you can configure settings in

Windows for the displays. Right-click the desktop and choose Screen Resolution to display the Screen Resolution page shown in Figure 13.18.

FIGURE 13.18

Display settings with three monitors working


Screen Resolution
Control Panel ▸ All Control Panel Items ▸ Display ▸ Screen Resolution
Search Control Panel
3
2
1
Detect
Identify
OK
Cancel
Apply

Change the appearance of your displays

Display: 1. Mobile PC Display

Resolution: 1920 × 1080 (Recommended)

Orientation: Landscape

Multiple displays: Extend desktop to this display

☐ Make this my main display

Advanced settings

Project to a second screen (or press the Windows logo key + P)

Make text and other items larger or smaller

What display settings should I choose?

TIP

You can specify multiple monitor configurations from the Start screen as well. Open the Charms Bar, tap Devices, and then tap Second Screen.

The Screen Resolution page will show the additional displays after you connect the other displays to the computer. The displays are identified by numbers. The graphics on the displays indicate which is primary (that is, where the Start menu will appear) and which are secondary. Click the Identify button to have Windows display a large number on the display to help you identify which is which.

The following list explains the controls on the Screen Resolution page:

- **Display:** Use this drop-down button to choose a display to configure.
- **Resolution:** Select the display resolution from this slider button.

- **Orientation:** Choose between Landscape and Portrait modes, as well as Landscape (Flipped) and Portrait (Flipped) modes (which rotate the display).
- **Multiple Displays:** Choose Duplicate These Displays to display the same information on both displays. Choose Extend These Displays to extend the desktop across both displays. The other two options show the desktop only on display 1 or 2, depending on which you select.
- **Make This My Main Display:** Select this option to make the display number selected in the Display button the main display where the Start menu will appear.
- **Detect:** Click this button to have Windows detect the new display.
- **Identify:** Click this button to display an identifying number on the displays so that you can tell which is which.
- **Make Text And Other Items Larger Or Smaller:** Click this link to open a Display page, where you can choose the font size to use on the displays.

TIP

Extending Microsoft Excel across two monitors enables you to see twice as many columns!

You can also display content on the second monitor only, leaving the first monitor black. If you're using a mobile computer on batteries, this option conserves battery power.

Regardless of how you set things in the New Display Detected window (or even if it doesn't appear at all), you can use the Display Settings dialog box to configure the second monitor. Open Display Settings as described at the top of this section. Then, click the second monitor's box (with the number 2 in it). If that second monitor is grayed out, choose Extend My Desktop Onto This Monitor. If the second monitor still doesn't light up, click Apply.

More Stuff You Can Do with Monitors

Your monitor attaches to a graphics card or graphics chip inside your computer. That card or chip defines the full range of your visual display. Windows 8 might not give you access to the full range of settings available to you, even after you click the Advanced Settings button.

To take full advantage of your graphics card's (or chip's) capabilities, you may want to use the configuration program that came with that device. There are hundreds of such devices on the market and no rule that applies to them all. To fully understand the capabilities of your graphics card and the programs for using it, refer to the manual that came with the card or your computer.

NOTE

If you can't get the second monitor to work, make sure it's properly connected and turned on. If the second monitor is a TV, make sure you choose the right input setting using Input Select or TV/Video on the TV or its remote control.

You can arrange the squares in the dialog box to match the arrangement of the monitors. For example, if monitor 2 is to the left of monitor 1, drag the 2 square to the left of the 1 square. If the monitors are stacked with 1 on top of 2, drag the 1 square so that it's above the 2 square.

Reducing monitor flicker

If a monitor seems to flicker, adjusting its refresh rate can help. You shouldn't change the refresh rate just for the heck of it, however. Do so only to reduce flicker. First, click the Advanced Settings link. Then click the Monitor tab in the dialog box that opens. Use the drop-down under Screen Refresh Rate to try a higher setting.

CAUTION

Don't deselect the Hide Modes That This Monitor Cannot Display check box. Doing so allows you to choose settings that could damage the monitor!

After you choose a new refresh rate, click Apply. The monitor might go blank for a few seconds. When it comes back on, see whether the situation has improved. If not, you can try another refresh rate (followed by a click on the Apply button) until you find an optimal setting. When you find the best setting, click OK to close the Advanced Settings dialog box.

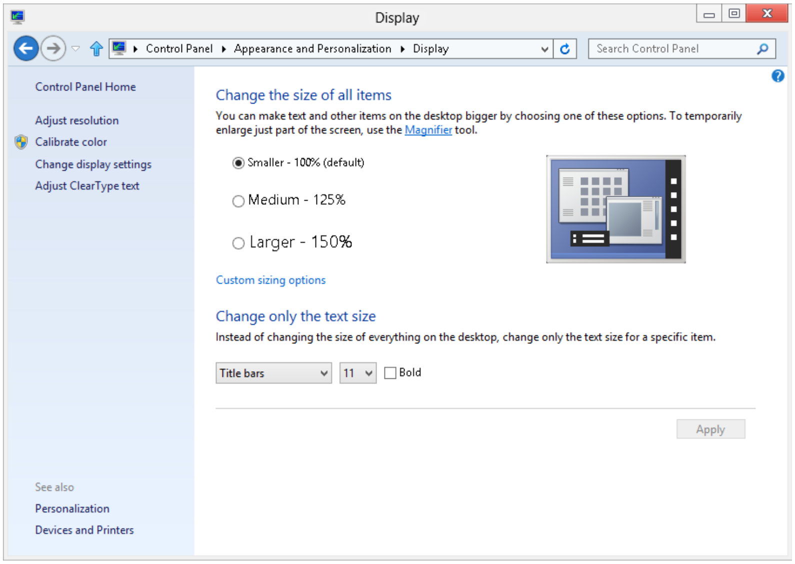
Don't forget to click OK after adjusting settings in the Display Settings dialog box. Remember that the settings you choose aren't set in concrete. You can re-open that dialog box and change things any time you like.

Adjusting the font size (dpi)

Windows 8 lets you change the size of text and other items on the display, which can be particularly useful for high-resolution displays, making the screen more readable (which becomes more important the older we get!). To change text size, open the Display item from the Control Panel. Or right-click the desktop, choose Screen Resolution, and then click Make Text And Other Items Larger Or Smaller. Figure 13.19 shows the resulting page, where you can choose among the sizes 100%, 125%, and 150%.

FIGURE 13.19

The Display page


Display
Control Panel ▸ Appearance and Personalization ▸ Display
Search Control Panel
Control Panel Home
Adjust resolution
Calibrate color
Change display settings
Adjust ClearType text
See also
Personalization
Devices and Printers
Custom sizing options
Apply

Change the size of all items

You can make text and other items on the desktop bigger by choosing one of these options. To temporarily enlarge just part of the screen, use the Magnifier tool.

● Smaller - 100% (default)

○ Medium - 125%

○ Larger - 150%

Change only the text size

Instead of changing the size of everything on the desktop, change only the text size for a specific item.

Title bars | 11 | ☐ Bold

When you change the text size using the Display page, you have to log out and log back in for the change to take effect. (You don't need to restart the computer.)

In addition to setting text size as described previously, you can also choose a custom DPI setting. Here's how:

1. Close all open programs and log in to a user account that has administrative privileges.
2. Open the Display item from the Control Panel, or open the Personalization window (right-click the desktop and choose Personalize); then click Display in the left pane.
3. Click Custom Sizing Options to open the Custom Sizing Options dialog box, shown in Figure 13.20.
4. To make text a different size, choose a setting (for example, 125%) from the drop-down list. You can also click and drag left or right in the ruler to change the size up to 500 percent.
5. Click OK.

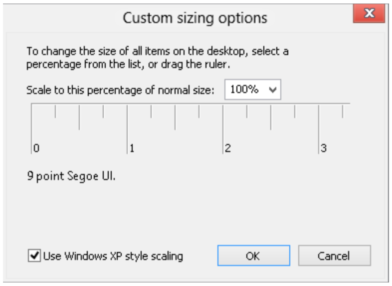
NOTE

Be careful to increase the current percentage value only slightly. Otherwise, you might make things so huge that hardly anything fits on the screen.

6. Click Apply and then click Log Off Now or Log Off Later, depending on whether you want to apply the change now or wait until the next time you log in.

FIGURE 13.20

Custom Sizing Options dialog box


Custom sizing options
0
1
2
3
OK
Cancel

To change the size of all items on the desktop, select a percentage from the list, or drag the ruler.

Scale to this percentage of normal size: 100%

9 point Segoe UI.

☑ Use Windows XP style scaling

The new setting will be applied after you log out and log back in again. If the items on your screen are too large, repeat the preceding steps, choosing a smaller size in Step 4.

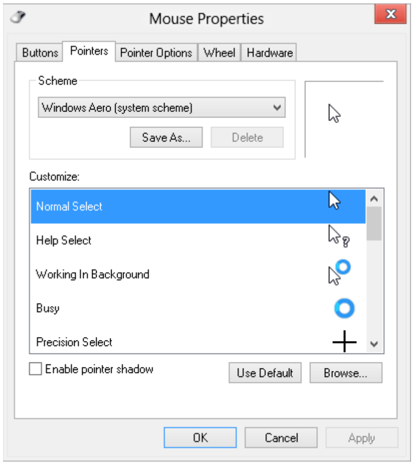
Adjusting the font size dpi isn't the only way to enlarge text on the screen. Many programs offer a Zoom option on their View menus that enables you to resize text. The Accessibility options described later in this chapter also offer some alternatives.

Personalizing your mouse

If you grow tired of the same old mouse pointer, or need to make your mouse pointer easier to see, click the Change Mouse Pointers link in the Personalization window. You see the Mouse Properties dialog box with the Pointers tab selected, as shown in Figure 13.21.

FIGURE 13.21

Pointers tab in Mouse Properties


Mouse Properties
Buttons
Pointers
Pointer Options
Wheel
Hardware
Save As...
Delete
Use Default
Browse...
OK
Cancel
Apply

Scheme: Windows Aero (system scheme)

Customize:

- Normal Select
- Help Select
- Working In Background
- Busy
- Precision Select

☐ Enable pointer shadow

To change your mouse pointers, choose a scheme from the drop-down menu. The list under the Customize heading shows you how the pointers in that scheme look. You can keep all the mouse pointers in the scheme by clicking OK, or you can assign a mouse pointer of your own. Double-click the pointer you want to change, or click it and click the Browse button. Clicking Browse takes you to a folder named Cursors, which contains all the built-in Windows 8 mouse pointers.

TIP

After you click Browse, you can enlarge the mouse pointer icons in the Browse dialog box for a better look. Hold down the Ctrl key and spin your mouse wheel, or click the Views button and choose Medium icons or a larger size.

If you do assign mouse pointers on a case-by-case basis, click the Save As button to save your selections as a theme with any name you like.

TIP

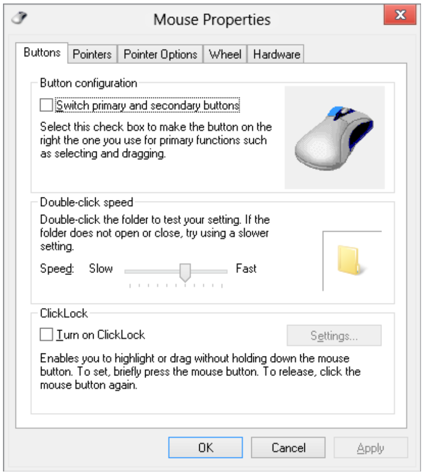
Don't forget that most dialog box options aren't actually applied until you click the Apply or OK button.

Mice for lefties

If you're left-handed and you want the main mouse button to be below your left index finger, you need to reverse the normal functioning of the buttons. Generally, the left mouse button is the primary button, and the right mouse button is the secondary button. To reverse that setup, first click the Buttons tab in the Mouse Properties dialog box so that you see the options shown in Figure 13.22. Then select the Switch Primary And Secondary Buttons check box.

FIGURE 13.22

Buttons tab in Mouse Properties



Button configuration

☐ Switch primary and secondary buttons

Select this check box to make the button on the right the one you use for primary functions such as selecting and dragging.

Double-click speed

Double-click the folder to test your setting. If the folder does not open or close, try using a slower setting.

Speed: Slow Fast

ClickLock

☐ Turn on ClickLock

Enables you to highlight or drag without holding down the mouse button. To set, briefly press the mouse button. To release, click the mouse button again.

If you do reverse your mouse buttons, you have to adjust all the standard mouse terminology accordingly. Table 13-2 shows how the various mouse terms apply to right-handed and left-handed settings.

TABLE 13-2 **Mouse Terminology for Righties and Lefties**

Standard Terminology	Righties	Lefties
Primary button	Left button	Right button
Secondary button	Right button	Left button
Click	Left button	Right button
Double-click	Left button	Right button
Drag	Left button	Right button
Right-click	Right button	Left button
Right-drag	Right button	Left button

Adjusting the double-click speed

To double-click an icon, you have to tap the primary mouse button twice very quickly. Otherwise, it counts as two single clicks. If it's difficult to tap the button quickly enough, or if you're so fast that two single clicks are being interpreted as a double-click, adjust the Double-Click speed slider on the Buttons tab of the Mouse Properties dialog box.

TIP

To do away with the need to double-click anything, switch to single-clicking in the Folder Options dialog box. Tap ⊞, type **fol**, click or tap Settings, and choose Folder Options for that dialog box.

To test your current setting, double-click the folder icon. If the closed folder doesn't change to an open one (or vice versa), you didn't double-click fast enough. Move the slider box toward the slow end of the scale and try again. When the slider is at a place where it's easy to open/close the little folder next to the slider, that's a good setting for you.

Using ClickLock

If you find it difficult to select multiple items by dragging the mouse pointer through them, you may want to try activating the ClickLock feature. Enabling that feature lets you select multiple items without holding down the mouse button. First you need to choose Turn On ClickLock on the Buttons tab of the Mouse Properties dialog box. Then, use the Settings button to specify how long you need to hold down the primary mouse button before the key is "locked."

For example, say that you turn on ClickLock and set the required delay to about one second. To drag the mouse pointer through some items, you position the mouse pointer to where you plan to start selecting and hold down the mouse pointer for one second. Then you can release the mouse button and move the mouse pointer through the items you want to select. Those items will be selected as though you were actually holding down the left mouse button.

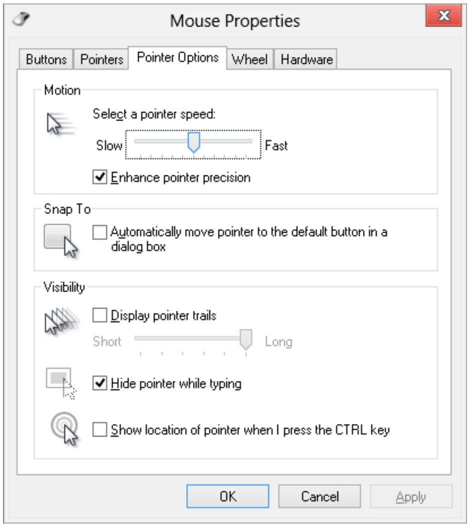
When you've finished selecting, just click some area outside the selection. The mouse pointer returns to its normal function, and the items you selected remain selected.

Speed up or slow down the mouse pointer

Clicking the Pointer Options tab in the Mouse Properties dialog box reveals the options shown in Figure 13.23. The first option, Select A Pointer Speed, controls how far the mouse pointer on the screen moves relative to how far you move the mouse with your hand. If you find it difficult to zero in on small things on your screen, drag the slider to the slow end of the scale. If you feel you have to move the mouse too much to get from one place to another on the screen, move the slider toward the fast end of the scale.

FIGURE 13.23

Pointer Options tab in Mouse Properties



☑ Enhance pointer precision

☐ Automatically move pointer to the default button in a dialog box

☐ Display pointer trails

☑ Hide pointer while typing

☐ Show location of pointer when I press the CTRL key

Selecting Enhance Pointer Precision makes it easier to move the mouse pointer short distances. It's especially useful if you move the pointer speed slider to the Fast side of the scale.

Making the mouse pointer more visible

If you keep losing sight of the mouse pointer on your screen, the remaining pointer options can make it easier to find, as follows:

- **Snap To:** If selected, this causes the mouse pointer to jump to the default button (typically the OK button) automatically as soon as the dialog box opens.
- **Display Pointer Trails:** If selected, this causes the mouse pointer to leave a brief trail when you move it, making it easier to see the pointer.
- **Show Location Of Pointer When I Press The CTRL Key:** If you select this option, you can easily locate the mouse pointer on your screen by holding down the Ctrl key.

TIP

When you use a projector to give a demonstration onscreen, turn on the pointer trails to make following the mouse across the screen easier for your audience.

Yet another way to make your mouse pointer more visible is to use a large or animated mouse pointer.

Changing mouse wheel behavior

The Wheel tab in the Mouse Properties dialog box lets you control how far you scroll when spinning the mouse wheel (if your mouse has one). The default is usually three lines per notch. But you can change that to any value from 1 to 100 lines. Optionally, you can configure the wheel to move an entire page with each notch.

NOTE

The Hardware tab in the Mouse Properties dialog box shows information about your mouse and provides a means for manually updating the mouse driver should the need ever arise.

Don’t forget to click OK after making your selection in the Mouse Properties dialog box.

That wraps it up for options in the Control Panel’s Personalization page. But as you’ll see in the sections to follow, there are many more things you can do to tweak Windows 8 to better suit your needs and tastes.

Personalizing the Keyboard

There are a few things you can do to change how the keyboard works. Some are in the Keyboard Properties dialog box, which we cover here. Others come under the heading of accessibility and are set using the Ease Of Access Center in the Control Panel (not covered in detail in this book). To get to the Keyboard Properties dialog box, use whichever of the following methods is easiest for you:

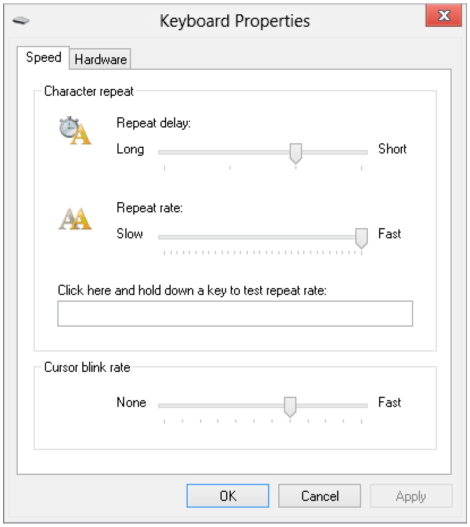
- Press ⊞, type **key**, click Settings, and click Keyboard.

- Open the Control Panel, click the arrow to the right of Control Panel in the breadcrumb trail and choose All Control Panel Items. Then click Keyboard.

The Keyboard Properties dialog box, shown in Figure 13.24, opens.

FIGURE 13.24

Keyboard Properties dialog box


Keyboard Properties
Speed
Hardware
Character repeat
Repeat delay:
Long
Short
Repeat rate:
Slow
Fast
Click here and hold down a key to test repeat rate:
Cursor blink rate
None
Fast
OK
Cancel
Apply

The options in the Keyboard Properties dialog box are as follows. As always, there is no right or wrong setting. It's all a matter of choosing settings that suit your typing style:

- **Repeat Delay:** Determines how long you have to hold down a key before it starts autotyping (repeating itself automatically).
- **Repeat Rate:** Determines how fast the key types automatically while you're holding it down.
- **Cursor Blink Rate:** Determines how rapidly the cursor blinks in a document.

If your keyboard offers programmable buttons, you may not see any options in the Keyboard Properties dialog box for defining those keys. More likely, you'll need to install and use the program that came with the keyboard to define the keys. There is no "one rule fits all" for that sort of thing. The only places to get the information you need are from the instructions that came with the keyboard and the keyboard manufacturer's website.

Creating Custom Shortcut Keys

Windows 8 offers many shortcut keys that you can use as an alternative to the mouse. They're summarized in Appendix C at the back of this book. Most programs also offer shortcut keys. Those you can discover by looking at pull-down menus or by searching that program's Help using the keywords **shortcut keys.**

You can create your own custom shortcut keys for launching favorite programs or opening folders. By default, these custom keys will be a Ctrl+Alt+*key* combination to avoid conflicts with built-in shortcut keys. Also, they'll work only when you're on the desktop. That's because keystrokes apply only to the active window. So if any program window is open on the desktop, your keystrokes apply only to that window.

Tip

You can minimize all open windows to get to the desktop without losing your place in open program windows. Right-click an empty area of the taskbar or the clock and choose Show The Desktop, or click the Show Desktop button at the far right edge of the taskbar. You can also press ⊞+M to show the desktop.

Before you create a custom shortcut key, make sure it's not already assigned to something else. Get to the desktop and press the Ctrl+Alt+*key* combination you intend to use. If nothing opens, you know the shortcut is available. If something does open, you need to come up with a different shortcut key, or remove the shortcut key from the item to which it's currently assigned.

You can assign a shortcut key to any item that offers a Shortcut Key option in its Properties dialog box. The easiest way, however, is to first create a desktop shortcut to the item. Then define the key in the desktop shortcut icon. So the first step is to get to the icon that opens the program or folder of interest. Then right-click that icon and choose Send To ➪ Desktop (Create Shortcut).

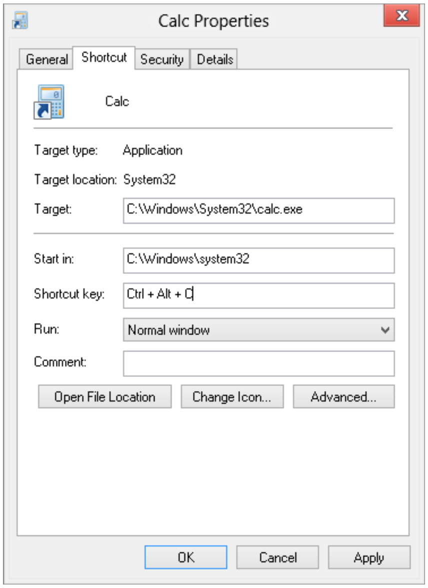
Note

If all your desktop icons are hidden, right-click an empty portion of the desktop and choose View ➪ Show Desktop Icons.

Next, get to the desktop and locate the shortcut icon you just created. Right-click that icon and choose Properties. Click the Shortcut tab in the Properties sheet. Then click in the Shortcut Key box and type the letter you want to use as the shortcut. For example, Figure 13.25 shows that we typed the letter **C** in the Shortcut Key box for the Calculator shortcut's properties. Windows automatically added the Ctrl+Alt+ in front of that letter **C** we typed.

FIGURE 13.25

Ctrl+Alt+C shortcut assigned to Calculator



Target type: Application
Target location: System32
Target: C:\Windows\System32\calc.exe
Start in: C:\Windows\system32
Shortcut key: Ctrl + Alt + C
Run: Normal window
Comment:

Click OK to close the dialog box. To test the shortcut, make sure you're at the desktop and then press the shortcut key combination. For example, pressing Ctrl+Alt+C after assigning the key combination just described opens Calculator.

There is one slight disadvantage to assigning the shortcut key in a shortcut icon. If you delete the shortcut icon from your desktop, you also delete the shortcut key. If that's a problem, you can hide, rather than delete, the desktop icon. Just right-click that icon and choose Properties. Click the General tab in the Properties dialog box and select the Hidden check box. Then click OK. The icon disappears (or goes dim) but the shortcut key still works.

Whether hidden icons are dim or invisible depends on a setting in Folder Options. To get to that dialog box, open the Start screen, type **fol**, click Settings, and click Folder Options. Click the View tab in the dialog box. To make hidden icons invisible, choose Do Not Show Hidden Files And Folders. To make them visible but dim, choose Show Hidden Files And Folders. Click OK after making your selection.

TIP

You can open the Folder Options dialog box by opening a folder and clicking the Options button on the View tab.

Customizing the Taskbar

The taskbar, which by default is at the bottom of your screen, is one of the most useful tools in Windows. It contains a button for each open desktop program window, icons for any programs that you have pinned to the taskbar, and the Notification area. It can also contain some toolbars, such as the Address toolbar, which provides an easy way to open websites, drives, folders, or other items by their path or URL. You can customize the taskbar in many ways, so don't worry about what you see on yours right at this moment.

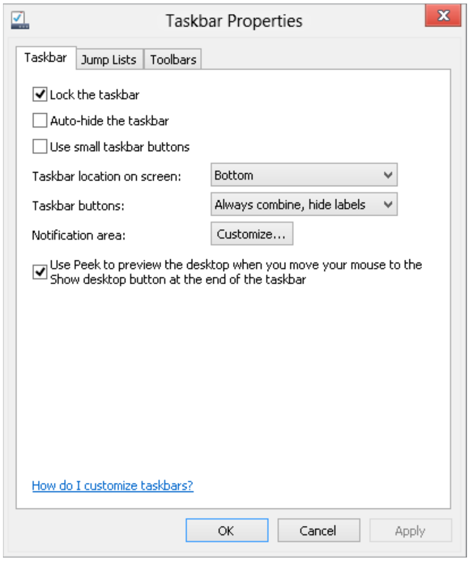
Some options for customizing the taskbar are in the Taskbar Properties dialog box. To open that dialog box, use whichever of the following techniques is easiest for you:

- Right-click any empty spot on the taskbar and choose Properties.
- Tap ⊞, type **task**, tap Settings, and click Taskbar.
- In the Control Panel, choose Appearance and Personalization ➪ Taskbar.

In the dialog box, click the Taskbar tab to see the options shown in Figure 13.26. The options on that tab are as follows:

FIGURE 13.26

Taskbar tab in the Taskbar Properties dialog box



Taskbar Properties

Taskbar | Jump Lists | Toolbars

☑ Lock the taskbar

☐ Auto-hide the taskbar

☐ Use small taskbar buttons

Taskbar location on screen: Bottom

Taskbar buttons: Always combine, hide labels

Notification area: Customize...

☑ Use Peek to preview the desktop when you move your mouse to the Show desktop button at the end of the taskbar

How do I customize taskbars?

OK | Cancel | Apply

- **Lock The Taskbar:** If you select this option, you lock the taskbar, which prevents you from accidentally moving or resizing it. If you want to move or resize the taskbar, you first need to deselect this option to unlock the taskbar.

- **Auto-Hide The Taskbar:** If you select this icon, the taskbar automatically slides out of view when you're not using it, thereby freeing the little bit of screen space it takes up. After the taskbar hides itself, you can rest the tip of the mouse button on the thin line at the bottom of the screen to bring the taskbar out of hiding.
- **Use Small Taskbar Buttons:** Show small icons rather than the larger, default size icons for taskbar items.
- **Taskbar Location On Screen:** Choose on which edge of the display the taskbar will appear.
- **Taskbar Buttons:** Choose whether Windows combines similar items on the taskbar (such as documents for the same program), and whether it combines icons all the time or only when the taskbar is full.
- **Customize:** Click this button to specify which items appear in the Notification area of the taskbar (tray).
- **Use Peek To Preview The Desktop:** Choose this option to hide all applications and show the desktop when you hover the mouse over the Show Desktop button at the far bottom right of the display.

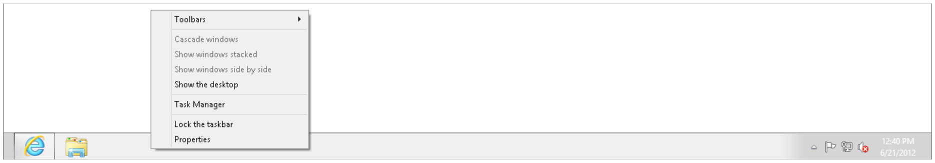
Click OK after making your selections from the dialog box. There are some other things you can do outside that dialog box to customize the taskbar, as described next.

Locking and unlocking the taskbar

The taskbar doesn't have to be at the bottom of the screen. And it doesn't need to be a specific height, either. When the taskbar is unlocked, you can move and size it at will. If the taskbar is unlocked, putting the tip of the mouse pointer at the top of the taskbar changes the pointer to a two-headed arrow. Also, if you have any toolbars on the taskbar, you'll see a *dragging handle* (columns of dots) next to each toolbar. When you right-click an empty area of the taskbar or the current time, the Lock The Taskbar option on the menu is deselected (see Figure 13.27).

FIGURE 13.27

Unlocked taskbar



If the taskbar is locked, just right-click an empty portion of the taskbar or the current time and click Lock The Taskbar to unlock. The option is a toggle, so you can use the same procedure to lock the taskbar when it's unlocked.

Moving and sizing the taskbar

When the taskbar is unlocked, you can dock it to any edge of the screen as follows:

1. Place the tip of the mouse pointer on an empty portion of the taskbar (not in a toolbar or on a button).
2. Hold down the left mouse button, drag the taskbar to any screen edge, and release the mouse button.

To change the height of the taskbar, put the tip of the mouse pointer on the top of the taskbar so that it changes to a two-headed arrow. Then, hold down the left mouse button and drag up or down until the bar is at a height you like. The minimum height is one row tall. The maximum is about a third of the screen.

TIP

If you have any problem getting the taskbar back to the original one-row tall size, close all open toolbars. Then size the taskbar to the height you want and choose which toolbars you want to view.

If you want to hide the taskbar altogether, select the Auto-Hide The Taskbar option in the Taskbar And Start Menu Properties dialog box, described earlier in this chapter. The taskbar stays hidden until you move the mouse pointer to the edge of the screen where you placed the taskbar.

Showing toolbars on the taskbar

Windows 8 comes with some optional toolbars you can add to the taskbar or allow to float freely on the desktop. To show or hide a toolbar, right-click the clock in the lower-right corner of your screen or an empty part of the taskbar and choose Toolbars. You see the names of toolbars shown in Figure 13.28 and summarized here.

- **Address:** Displays an Address bar like the one in your web browser. Typing a URL into the bar opens your web browser and the page at the URL.
- **Links:** Displays the contents of Internet Explorer's Links folder as a toolbar. See "Using the Links toolbar (Favorites Bar)," later in this chapter, for more information.
- **Touch Keyboard:** Displays the touch keyboard/handwriting recognition window used with tablet PCs. Add this toolbar to your taskbar if you routinely work from the Windows desktop on a touch device.
- **Desktop:** Shows all the icons from your desktop in a condensed toolbar format, along with Libraries, Computer, Network, Control Panel, and your user profile folder.

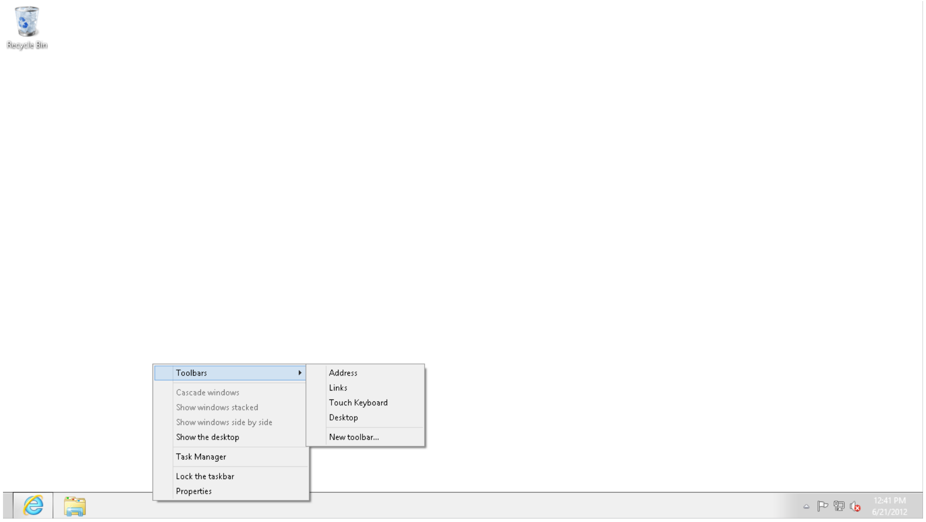
TIP

Add the desktop toolbar to your taskbar to give you quick access to many of the items previously included in the Windows Start menu.

- **New Toolbar:** Create a custom toolbar containing icons from any folder you wish. For example, after choosing this option, click Documents under Libraries in the New Toolbar dialog box and click OK. The new toolbar that appears will provide quick access to all your folders and documents in your Documents folder.

FIGURE 13.28

Show or hide optional toolbars.


Recycle Bin
Toolbars
Cascade windows
Show windows stacked
Show windows side by side
Show the desktop
Task Manager
Lock the taskbar
Properties
Address
Links
Touch Keyboard
Desktop
New toolbar...
12:41 PM
6/21/2012

On the Toolbars menu, any toolbar that has a checkmark next to its name is "on" and visible in the taskbar. Any toolbar whose name isn't selected is hidden. Click a name to hide, or show, the toolbar.

When you first choose a custom toolbar, there may not be room for it on the taskbar, especially if the taskbar is already loaded up with buttons or other toolbars. The next section explains ways to deal with that.

Sizing and positioning taskbar toolbars

There isn't a lot of room on the taskbar, so it gets crowded if you add too many items to it. If you use a lot of optional toolbars on your taskbar, consider making it taller so that it can show more items. Try moving it to the side of the screen to see whether that helps.

When you have more items on a toolbar than it can show, you see the >> symbol at the right side of the toolbar. Clicking that shows the items that don't fit onscreen on the toolbar. If you have more open program windows than space for taskbar buttons, use the up and down arrows to the right of the visible taskbar buttons to see additional buttons.

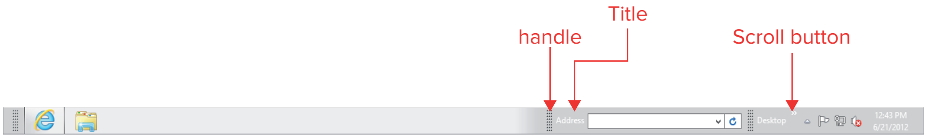
TIP

You can also switch from one open program window to the next by pressing Alt+Tab.

When the taskbar is unlocked, you see a dragging handle at the left side of each toolbar. You can drag those handles left and right to move and size toolbars. You can also show or hide the toolbar titles. Figure 13.29 shows an example of the titles, a handle, and taskbar button scrolling arrows.

FIGURE 13.29

Taskbar and toolbar handles, titles, text, and buttons



To show or hide the title or text, right-click the toolbar's title or dragging handle. Then choose Show Title to show or hide the toolbar's title. Click Show Text to show or hide text for icons on the toolbar.

NOTE

Text always appears next to icons when you click >> on a toolbar. The Show Text option has no effect on that. To change the text that appears next to an icon, right-click that text, choose Rename, type the new name (or edit the existing name), and press Enter.

Using the Links toolbar (Favorites Bar)

The Links toolbar offers easy, one-click access to favorite websites. In fact, the Links toolbar shows the contents of your Internet Explorer Favorites Bar. Just understand that Links on the taskbar is actually your Internet Explorer Favorites Bar.

You can make the Favorites Bar visible in Internet Explorer, the taskbar, or both. It's easiest to add links to the toolbar from Internet Explorer. If you don't see that toolbar in Internet Explorer, right-click the Internet Explorer window's title bar and choose Favorites Bar. The rest is easy:

- To create an icon for the page you're currently viewing, click the Add To Favorites Bar button at the far left of the Favorites Bar.

TIP

As with any toolbar, when there are more links than space, you see >> at the end of the toolbar. Click that symbol to see hidden links.

- To create an icon for a link on the current page, drag the link from the page onto the Favorites Bar.
- To remove an icon from the Favorites Bar, right-click the item and choose Delete.
- To rearrange items on the Favorites Bar, drag the item's icon to a new location on the toolbar.

Any changes that you make to the Favorites Bar in Internet Explorer are automatically reflected in the Links toolbar on the taskbar.

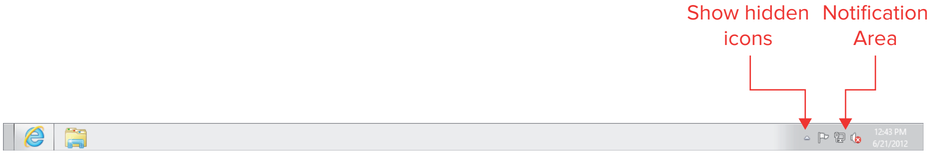
Customizing the Notification Area

The Notification area (also called the system tray) appears at the right side of the taskbar. It contains icons for programs and services that are running in the *background*, which means it's a program that typically doesn't have a specific program window or taskbar button associated with it. Icons in the Notification area represent features such as your antivirus software, volume control, network connection, and Windows Sidebar. Pointing to an item displays its name or other information.

To conserve space on the taskbar, nonessential or inactive icons can be hidden. When you have hidden items, you see a small up-facing arrow at the left side of the Notification area, as shown in Figure 13.30. Click the arrow button (labeled Show Hidden Icons) to see the hidden items.

FIGURE 13.30

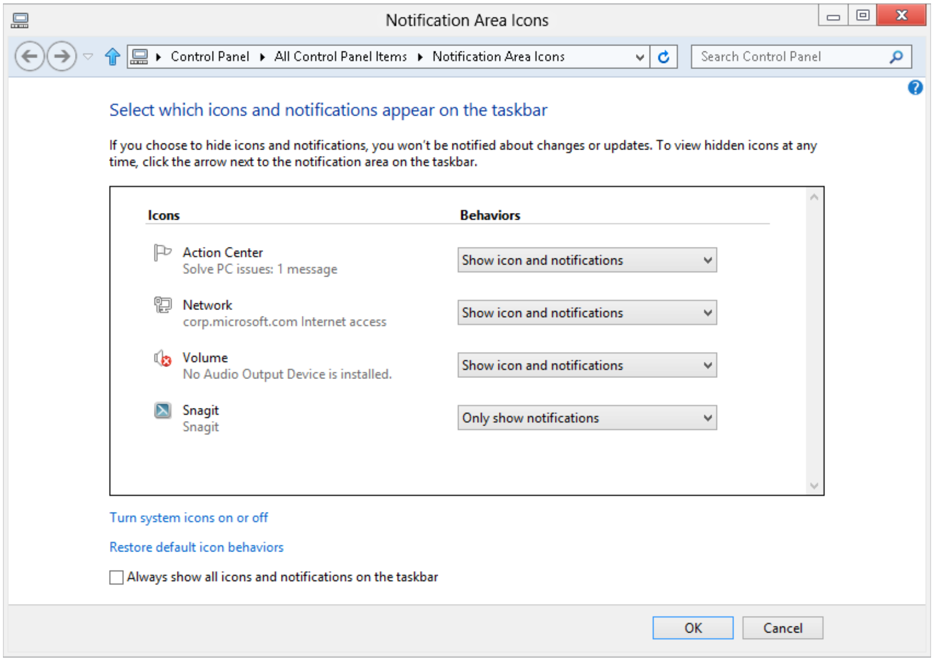
Notification area



You can use a couple of different dialog boxes to customize the Notification area. The first is Taskbar Properties, which you've seen in previous sections. To open that, right-click the taskbar and choose Properties. Then, click Customize in the Notification area group and click the Turn System Icons On Or Off link near the bottom of the window to see the options shown in Figure 13.31.

FIGURE 13.31

Notification Area Icons window



Notification Area Icons
Control Panel ▸ All Control Panel Items ▸ Notification Area Icons
Search Control Panel

Select which icons and notifications appear on the taskbar

If you choose to hide icons and notifications, you won't be notified about changes or updates. To view hidden icons at any time, click the arrow next to the notification area on the taskbar.

Icons	Behaviors
Action Center Solve PC issues: 1 message	Show icon and notifications
Network corp.microsoft.com Internet access	Show icon and notifications
Volume No Audio Output Device is installed.	Show icon and notifications
Snagit Snagit	Only show notifications

Turn system icons on or off
Restore default icon behaviors
☐ Always show all icons and notifications on the taskbar
OK
Cancel

Use the drop-down buttons to show or hide the Clock, Volume Control, Network, Power, and Action Center icons. Any items that are disabled (dimmed) aren't relevant to your system, so don't worry about those.

NOTE

As always, the items you turn on or off aren't affected until you click Apply or OK.

For more detailed control over the Notification area, click the Show Hidden Icons button and click Customize, or right-click the current time in the lower-right corner of the screen and choose Customize Notification Icons. Either way, the Notification Area Icons window opens. Chapter 2, "Navigating the Windows 8 User Interface," explains how to configure these settings.

Getting rid of Notification area icons

You cannot delete a Notification area icon by right-clicking and choosing Delete. Unlike toolbars, its icons are not shortcuts for opening programs. Icons in the Notification area represent programs that are already running — albeit in the background, with nothing showing on the screen.

There is no single, simple step you can perform to get rid of a Notification area icon. There are hundreds of programs on the market that can run in the background. To keep such a program from showing up in your Notification area, you might need to prevent that program from auto-starting with your computer, or you might need to remove the program from your system altogether. Then again, you might need only to get to the program's Options dialog box and deselect the check box that makes it show a Notification area icon.

One thing's for sure: You don't want to delete anything from the Notification area unless you know exactly what you're deleting and why. For example, an icon could represent your virus or spyware protection. You wouldn't necessarily want to delete such programs, or prevent them from auto-starting, because they need to be running in the background to keep your computer secure.

To see what options are available for a Notification area icon, right-click the icon. Some programs that run as icons in the Notification area can show up on the screen in a program window. Double-clicking its Notification area icon will usually open that program window. From there, you can learn more about the program that the icon represents. If it has a menu bar, choosing Tools ➪ Options might take you to a dialog box where you can prevent the program from auto-starting, or prevent it from showing up in the Notification area.

If the Notification area icon represents a program you don't want on your system at all, you can remove the program through Control Panel. Just make sure you don't remove a program you actually need and cannot replace. See Chapter 42, "Managing Programs and Processes," for the goods on removing programs.

If you want to keep a program but also want to prevent it from auto-starting and can't find a way to do that from within the program, there are still a couple of other ways to do that. If the program has an icon in your Startup folder, you can just remove that icon from that folder. Or you can use the System Configuration tool in the Administrative Tools folder to disable auto-starting of specific programs.

Tweaking the clock

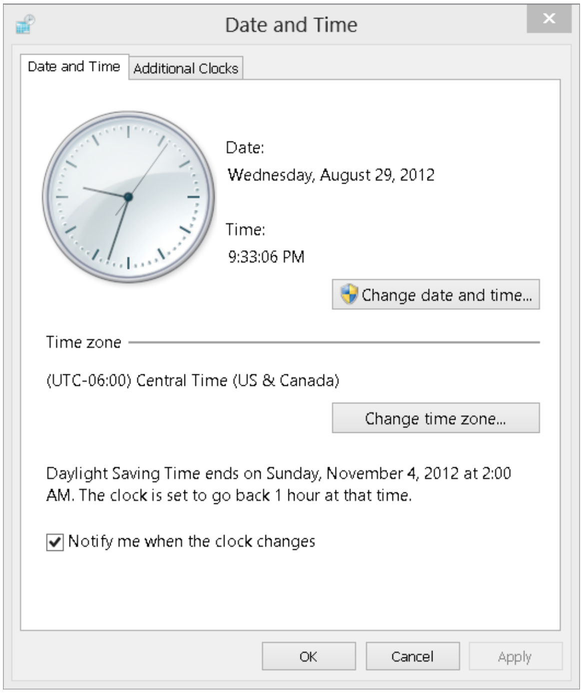
The clock in the lower-right corner of the screen doesn't look like much, but you can do quite a few things with it. If you point to it, you see the current date. If you click it, you see the current date marked on a calendar and the time on a clock. If you right-click the time and choose Adjust Date/Time, you come to the dialog box shown in Figure 13.32. There you can do several things with the clock.

NOTE

You need administrative privileges to change some aspects of the date and time. That might sound silly, but in a home environment, it keeps the kids from getting around parental controls that limit when they can use the computer.

FIGURE 13.32

Date and time properties



Date and Time

Date:
Wednesday, August 29, 2012

Time:
9:33:06 PM

Time zone

(UTC-06:00) Central Time (US & Canada)

Daylight Saving Time ends on Sunday, November 4, 2012 at 2:00 AM. The clock is set to go back 1 hour at that time.

☑ Notify me when the clock changes

First, you want to make sure your clock is set to the time zone you're in. Click Change Time Zone and choose your time zone. If you're in an area that honors daylight savings time, check the option that allows that change to be handled automatically.

If the date or time is wrong on your clock, you can click Change Date And Time and manually enter the correct information. Or click the Internet Time tab and click Change Settings. Then click Update Now to synchronize your calendar and clock with the "official time" on the Internet.

NOTE

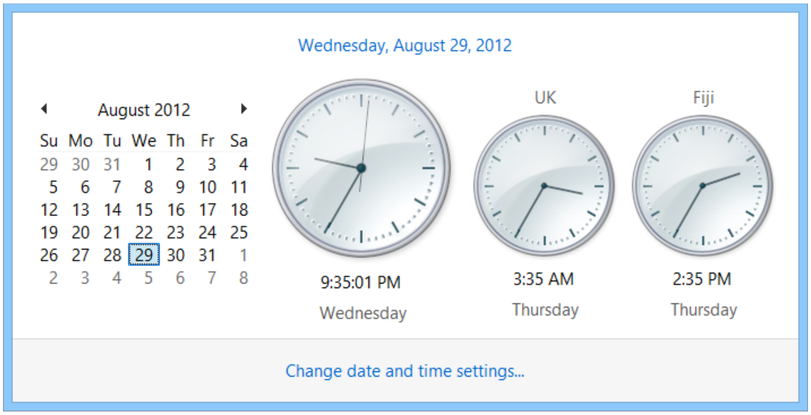
You might see a message that the Windows Time service is not running when you open the Internet Time tab. You can still click Change Settings and click Update Now to set the time. Windows will start the Time service for you.

You can also make the clock show the current time for up to three time zones. Click Additional Clocks. Then just follow the onscreen instructions to add one or two more times to your clock. Click OK after adjusting all your time settings.

Back on the desktop, the current time in the Notification area will be accurate. Likewise when you point to the time to see more information. If you set up multiple time zones, you'll see them all when you point to the current time. Clicking the time shows times for all time zones in the form of clocks, as in Figure 13.33.

FIGURE 13.33

Clocks for multiple time zones



Wednesday, August 29, 2012

August 2012

Su	Mo	Tu	We	Th	Fr	Sa
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

9:35:01 PM
Wednesday

UK
3:35 AM
Thursday

Fiji
2:35 PM
Thursday

Wrap-Up

This chapter has been all about the many ways you can customize the Windows desktop, Start menu, and taskbar to set up your screen in a way that works for you. You have many options. The important thing to keep in mind is that they are *options*, and there is no right or wrong way to do things. It's all about making choices that work for you. Here's a quick recap of the essentials:

- The Windows desktop is basically your entire screen — the place where you do all your work.

- Most tools for personalizing your system are in the Personalization page of the Control Panel. To get there quickly, right-click the desktop and choose Personalize.
- To personalize your taskbar, right-click the taskbar and choose Properties.
- To create a custom shortcut key for launching a program, right-click the program's icon and choose Properties. Then click the Shortcut tab and fill in the Keyboard Shortcut box.
- To add or remove taskbar toolbars, right-click the clock and choose Toolbars.
- To show or hide Notification area icons, right-click the clock and choose Customize Notification Icons.

CHAPTER 14

Transferring Files from Another Computer

IN THIS CHAPTER

Knowing what you can and can't transfer

Knowing which transfer method is best for you

Performing the transfer

Transferring files from older computers

If you bought a new computer with Windows 8 pre-installed, you may want to bring some files from an older computer into the new one. If both computers are on the same network, this is a simple matter of using drag-and-drop across folders. But if the two computers are not on the same network, it's a little trickier.

You could copy files from the old computer to a jump drive or other external drive. Then copy files from that drive into corresponding folders on the new computer. But that could take some time, especially if you have hundreds or thousands of files to copy.

Windows Easy Transfer provides a better way to get files from an old computer to a new one. You connect the two computers using a special cable. Then you run the program, tell it what you want to copy, and go to lunch. (Or possibly to bed, because the copying could take several hours.) This chapter explores all the possibilities. But first, let's talk about what you can and can't transfer so that you come into the whole thing with realistic expectations.

What You Can Transfer

You can't transfer everything from your old computer to the new one. But you can transfer just about everything you created or downloaded yourself. Specifically, you can transfer the following:

- **Files and folders:** Everything within the Documents and Public Documents folders and their subfolders to corresponding folders on the new computer.

- **Media Files:** Music, playlists, album art, pictures, and videos — most of which are likely stored in your Music, Pictures, Videos (or their Public) folder equivalents.
- **Internet settings and favorites:** Settings required for your Internet connection to work, as well as Favorites you've collected. You can also transfer cookies, which retain information that allows you to gain access to certain websites that might otherwise require logging in.
- **Personal settings:** Windows personalization settings such as desktop backgrounds, screen savers, Windows 8 interface settings, taskbar options, fonts, network connections, color schemes, accessibility options, and so forth. However, don't expect everything to look and work exactly as it did on your old computer because there are some changes in Windows 8.
- **User accounts:** If you have multiple user accounts on your old computer, you can transfer those as well. Each user account will retain its documents and settings.
- **Program settings:** Settings you chose within programs to personalize things can be transferred. However, it's important to keep in mind that the programs themselves are not transferred.

What You Can't Transfer

About the only things you can't transfer are the old version of Windows and programs on the old computer. That's because all programs (including Windows) need to be *installed* on the computer on which they'll run. Copying an installed program from one computer to another just flat-out won't work in almost all cases. The exceptions are too few to consider it a possibility.

Getting programs onto your new computer

Even though you can't transfer installed programs from one computer to another, you can install those same programs on the new computer. For programs you purchased on CD or DVD, just insert the disc into the new computer's CD/DVD drive and install as you normally would.

CAUTION

Do not install old utility programs (virus scanners, file managers, firewalls, and such) on your Windows 8 computer. (See "What not to install," later in this chapter, for more information.) Stick with *application* programs such as word processors, spreadsheets, graphics programs, and such — the types of programs used to create and edit documents.

For programs you downloaded, the rules are a little different. If you chose the Save option when downloading and kept that file, you can transfer the saved file to the new computer. Then open that file to start the installation process again. Otherwise, you have to go back to the website from which you originally downloaded the program and download again. That's not necessarily a bad thing, because the company might have released an updated version with useful improvements on a version designed specifically for Windows.

As far as Windows goes, a computer can run only one operating system at a time without a virtualization tool such as Virtual PC or VMware. It makes no sense to try to “transfer” Windows Vista, Windows XP, or Windows 7 to the new Windows 8 computer.

One Computer, Multiple Operating Systems

You can install and use multiple operating systems on a single PC in a couple of ways. One method, called *dual booting*, involves installing each operating system on its own hard drive *partition*. You can use the Disk Management tool described in Chapter 47, or a third-party program such as Partition Magic to create the partitions. Either way, you risk losing everything on your hard drive, so you must make backups first. If you’re not a drive disk or computer expert, you might seriously consider having multiple operating systems installed professionally rather than try to do it yourself.

Virtual machine software provides another approach to using multiple operating systems on a single computer. You can download and use Microsoft Virtual PC for free from `http://www.microsoft.com/windows/virtual-PC`, or you can browse to `http://search.microsoft.com` and search for “Windows 8 Virtual PC” for more specific information. You can also use a third-party product such as VMware described at `http://www.vmware.com/products/`.

What not to install

Utility programs are specifically designed for security or to enhance features of the operating system. Each is generally designed to work with a specific operating system or family of operating systems. You should never install a utility program on your Windows 8 computer that wasn’t specifically designed for Windows 8. If in doubt, you should contact the program manufacturer to find out whether installing it is okay.

Also, before you even bother installing such programs, learn what’s available in Windows 8 and how to use it. Chances are, you won’t even need those old utility programs. For example, Windows 8 has extensive security (such as an antivirus and anti-spyware tool called Windows Defender — see Chapter 10 for more details) built right into the very core of the operating system, plus lots of extras to protect your computer from many kinds of security threats. You can learn what those are and how to use them in Part II of this book.

Choosing a Transfer Method

To make transferring files as safe and painless as possible, Windows 8 comes with a program named Windows Easy Transfer. The program takes you step-by-step through the process of transferring usable files and settings from your old computer to your new Windows 8 computer. Windows Easy Transfer works only with Windows 8, Windows 7, Windows Vista, or Windows XP. If the computer from which you’re transferring files is not running one of those operating systems, you'll have to use an alternative method described later in this chapter.

Easy Transfer provides several methods of transferring files. You need to choose a method that both of your computers can support. The sections to follow describe the three methods: Easy Transfer cable, home network, and external drives or discs.

NOTE
If you upgraded your operating system from Windows 7, there's no need to transfer files. Your old files are still on your computer and should be available in Windows 8 automatically.

Using a USB Easy Transfer cable

If at all possible, you should use the USB Easy Transfer cable method to transfer files from your old computer to your new computer. If your new computer came with Windows 8 pre-installed, it might also have come with a USB Easy Transfer cable. Check the documentation that came with your computer if you're not sure, or contact your computer manufacturer.

If you don't have a USB Easy Transfer cable, you can purchase one online or at any retailer that sells computers or electronics equipment. Online, go to any computer retailer's site (`http://www.cdw.com`, `http://www.newegg.com`, `http://www.tigerdirect.com`, `http://www.amazon.com`) and search specifically for "USB Easy Transfer Cable." Or ask for it by name at your local retailer. It should come with a CD that includes the programs you need to make it work. Insert that CD in the old computer's CD drive and follow the onscreen instructions to install the drives and connect the cable.

CAUTION
Don't use the Easy Transfer CD in your new Windows 8 computer. That computer already has everything you need.

If the transfer cable isn't long enough to connect the two computers, and there's no way to resituate one computer, you might consider using a USB extension cable with the Easy Transfer cable. (Keep in mind that USB 2.0 specifications limit USB cable length to about 16 feet without using power amplifiers.) You can find these at many electronics stores. Or search the web or an online retailer for "USB extension cable." You might also consider two other methods of transferring items: using a home network or using external hard or flash drives. The following two sections discuss these methods.

Using a home network

If you already have a home network and your new Windows 8 computer is on that network, you can run Windows Easy Transfer on the new Windows 8 computer without connecting any more cables. However, this works only if the Windows 8 computer is already part of your home network. See Part X for more information on creating and using a home network.

Using external hard drives or flash drives

If you have no way to connect the new Windows 8 computer to the old computer, you can use an external hard drive or USB flash drive. You can use a *flash drive* (also called a jump drive) or an external hard drive that connects via USB. An external hard drive would be the quickest and easiest. If you use a flash drive, you need one with enough storage capacity for the largest file. It doesn't need capacity for *all* the files because you can make the transfer in several steps. If the flash drive contains backups of many important files, consider moving those to another location temporarily during the transfer. The more room you have on the flash drive, the better.

What About CDs, DVDs, and Floppy Disks?

By the way, you may have noticed that we didn't mention rewritable CDs/DVDs or floppy disks. That's because you can't use these media with Windows Easy Transfer. Rewritable CDs and DVDs have large capacities, but they are slow and not always reliable. In some larger organizations, CD and DVD drives are no longer part of the "standard" computer setup. The floppy disk's extremely small capacity (1.44MB) makes it an unrealistic medium for this sort of thing. In fact, most people would call it an unrealistic medium for much of anything, which is why many computer manufacturers don't even bother to put floppy drives in many systems they sell. Floppies are basically in the "obsolete" category of computer media — except for making backups of small files such as digital licenses and certificates.

How Long Does It Take?

How long it takes to transfer files from your old computer to the new one depends on how much stuff you're transferring and the method you use. But it could be several hours, so you should definitely start the process when you can concentrate on it for a while without interruptions.

Before you begin the transfer

Before you begin the transfer on your old computer, you may want to perform a few tasks. For one, make sure your old computer is clean of any viruses, spyware, and other malicious software. Run antivirus and anti-malware software to rid your computer of any harmful files. If you do not, that malicious software will follow you to your new Windows 8 computer.

If you have a lot of old junk on your old computer that you've been ignoring, a little spring cleaning may be in order. Delete anything you know for sure you will never need again for the rest of your life. No sense transferring trash. If you do, you'll eventually have to clean it off of both computers!

Performing the Transfer

After you've decided on a transfer method, Windows Easy Transfer takes you through the steps required to complete your transfer. In the examples that follows, you see how to transfer files from one Windows 8 computer to another Windows 8 computer using the External Hard Disk or USB Flash Drive transfer option. This way you can see how the interface looks on the new Windows 8 Windows Easy Transfer.

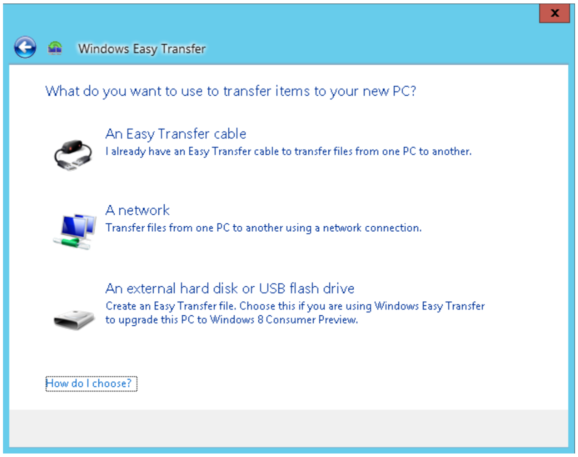
To get started, follow these steps:

1. On the Windows 8 PC that you want to transfer files from, display the Windows Start screen show the Charms Bar and choose Search. Type **trans** and click Windows Easy Transfer on the Apps screen.

   Windows Easy Transfer opens, looking like Figure 14.1.

FIGURE 14.1

First page of Windows Easy Transfer



What do you want to use to transfer items to your new PC?

An Easy Transfer cable
I already have an Easy Transfer cable to transfer files from one PC to another.

A network
Transfer files from one PC to another using a network connection.

An external hard disk or USB flash drive
Create an Easy Transfer file. Choose this if you are using Windows Easy Transfer to upgrade this PC to Windows 8 Consumer Preview.

TIP

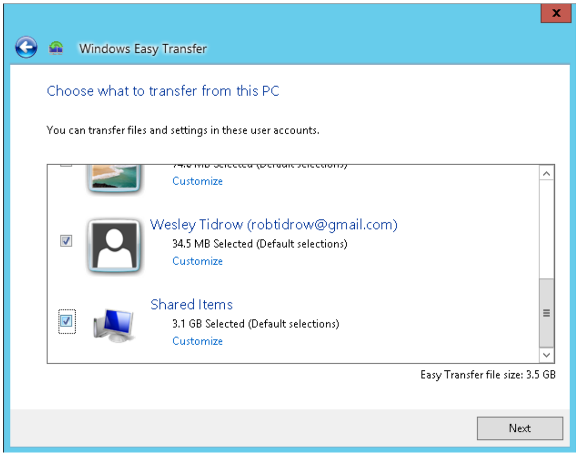
If you happen to be transferring files from a different version of Windows, the Windows Easy Transfer tool on Windows 8 asks you whether you have installed the Windows Easy Transfer software on your old PC and prompts you to select an external hard drive, shared network folder, or USB flash drive. It will then copy the software to the specified location, and you can use that software to install on your old PC. Run `MgSetup.exe` from the target location to install the software.

2. The program will take you step-by-step through the rest of the process. Make sure you read all the text on a page and accurately answer any questions before you click Next (or any other button) at the bottom of a page. You might notice the following things along the way:
   - If you left any other programs open before you started Easy Transfer, you'll be prompted to close them. Click Close All and, if prompted, save any unsaved work you left behind.
   - If asked for permission to work through your firewall, click Yes or OK. Don't worry — you're not making your computer vulnerable to hackers or malware. You're just giving Easy Transfer the right to do what it needs to do and nothing more.

   Regardless of which method you use, you'll eventually come to a page like the one in Figure 14.2.
3. Choose which user account files and shared items to transfer. To choose only certain items under each account or under the Shared Items, click the Customize link under the item to open the pop-up menu shown in Figure 14.3. You can simply check/uncheck items to specify whether they are included, and also click the Advanced link at the bottom of the pop-up window to open a File Explorer–like dialog box in which you can choose or exclude individual folders and files.

FIGURE 14.2

Choose the user accounts you want to transfer files and settings from



Windows Easy Transfer

Choose what to transfer from this PC

You can transfer files and settings in these user accounts.

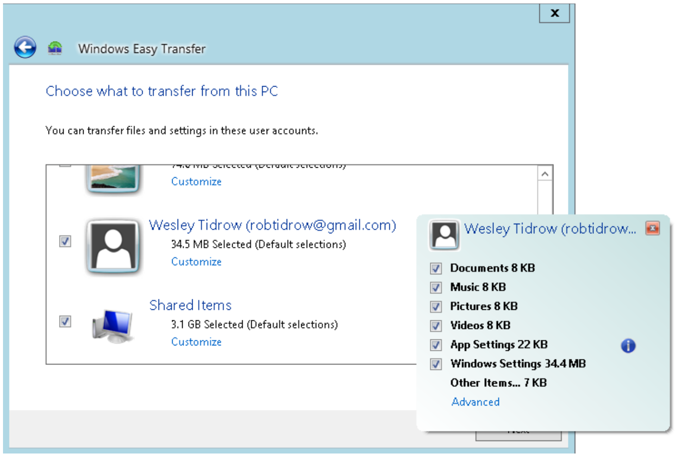
☑ Wesley Tidrow (robtidrow@gmail.com)
34.5 MB Selected (Default selections)

☑ Shared Items
3.1 GB Selected (Default selections)

Easy Transfer file size: 3.5 GB

FIGURE 14.3

Decide what to transfer



Choose what to transfer from this PC

You can transfer files and settings in these user accounts.

☑ Wesley Tidrow (robtidrow@gmail.com)
34.5 MB Selected (Default selections)
Customize

☑ Shared Items
3.1 GB Selected (Default selections)
Customize

Wesley Tidrow (robtidrow...
☑ Documents 8 KB
☑ Music 8 KB
☑ Pictures 8 KB
☑ Videos 8 KB
☑ App Settings 22 KB
☑ Windows Settings 34.4 MB
Other Items... 7 KB
Advanced

4. After you've made your selection, you're back to just reading and following instructions on the screen. In our example, you would click Next and then enter a password if you want to password-protect your files and settings that you transfer. If you do not want to password-protect them, leave the password box blank. Click Save to continue.

The instructions will be tailored to the method you're using and the files you're transferring. If you are transferring using the network, Windows Easy Transfer will issue you a key, for example. You enter this key in Windows Easy Transfer on the new computer to enable it to connect to your old one and begin the transfer.

When the Transfer Is Finished

When Easy Transfer has completed its task, your new computer will contain whatever you opted to transfer. Keep in mind that some folder names are different in Windows 8. The "Shared" folders are now "Public" folders (Public Documents, Public Pictures, and so forth).

NOTE

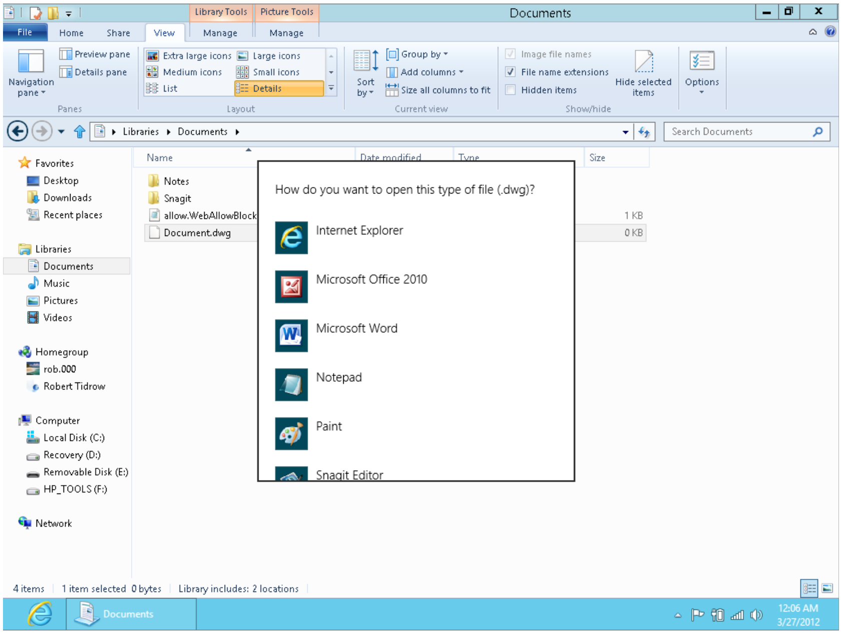
The Documents and Settings folder from Windows XP is named Users in Windows 8. The All Users subfolder is named Public in Windows 8.

Remember that programs from your old computer are typically not transferred unless they are standalone executables that do not require installation or setup. All programs must be installed to the computer on which they'll run. You need to start that installation from the original program CD or a download.

Documents for which there is no program on the new computer will not open on the new computer. When you attempt to open such a document, you'll see an error message like the one in Figure 14.4.

FIGURE 14.4

No program on this computer can open this document


Library Tools
Picture Tools
Documents
File
Home
Share
View
Manage
Manage
Navigation pane
Preview pane
Details pane
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Sort by
Group by
Add columns
Size all columns to fit
Image file names
File name extensions
Hidden items
Hide selected items
Options
Panes
Layout
Current view
Show/hide
Libraries
Documents
Search Documents
Name
Date modified
Type
Size
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
Removable Disk (E:)
HP_TOOLS (F:)
Network
Notes
Snagit
allow.WebAllowBlock
Document.dwg
1 KB
0 KB
Internet Explorer
Microsoft Office 2010
Microsoft Word
Notepad
Paint
Snagit Editor
4 items
1 item selected 0 bytes
Library includes: 2 locations
Documents
12:06 AM
3/27/2012

How do you want to open this type of file (.dwg)?

To open the document, you need to install whatever program you used on the older computer to the new computer. Note that choosing Look For An App On The Web from the message box does not make the required program install automatically. The service simply provides information about the program needed to open that type of file; it also links to more information. If the program is one you can download and install for free, the service might take you to the appropriate page for performing the download. But not all programs are free, and not all programs are available for download. With Windows 8, you also have the choice of looking for a Windows app in the Windows Store.

NOTE

When downloading a program, you need to choose Run to install the program while downloading. If you choose Save, the program won't install. You need to open (double-click) the icon of the file you downloaded to install the program.

Transferring Without Windows Easy Transfer

In some situations you might want to use a manual method to copy files and other items from your old computer to your new Windows 8 computer. For example, perhaps you can't use Windows Easy Transfer because of limitations of the PC or your working environment, or maybe you just want some manual alternatives.

One choice is to copy any files you need on the new computer to some external medium. Although a flash drive or external hard drive is recommended, you can use CDs or DVDs if both computers have appropriate drives. After you've copied all the necessary files to that external medium, connect it to or insert it into your Windows 8 computer and copy files from it to appropriate folders on your hard drive (for example, Documents, Pictures, Music, Videos).

Copying files won't help with Internet favorites, e-mail messages, contacts, and such. But you can usually *export* those items to files. Copy those files to your external medium and then *import* those files to corresponding programs on your Windows 8 computer. Options to import and export are usually on a program's File menu. If in doubt, you can search that program's Help for "Export" or "Import," depending on which you need to do.

The sections that follow offer a few handy tips and techniques. First, however, we offer a couple of cautions for people who skipped or didn't understand the preceding sections of this chapter.

CAUTION

The techniques assume that you know how to navigate folders, use your Computer folder (or My Computer folder in Windows XP), and copy files. Most of the concepts and skills presented in Part VI of this book apply to all versions of Windows.

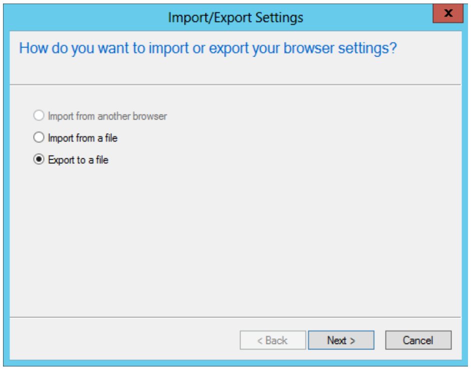
Manually transfer Internet Explorer Favorites

To export Internet Export Favorites on the old computer, follow these steps:

1. Choose Favorites and click the down arrow next to the Add To Favorites button.
2. Select Import And Export.
3. Choose Export To A File in the Import/Export Settings window and click Next (see Figure 14.5).
4. Select the Internet Explorer items you want to save, such as Favorites, Feeds, and Cookies.
5. Click Next and select the folder from which to export the favorites (see Figure 14.6).

FIGURE 14.5

Use the Export To A File option to export IE favorites

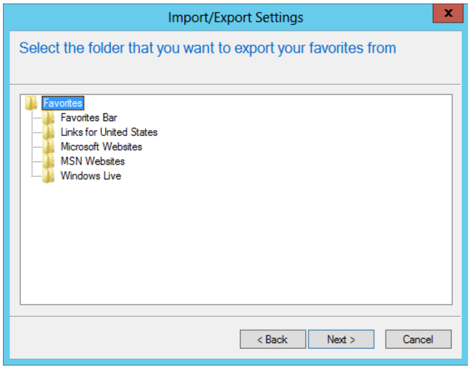


How do you want to import or export your browser settings?

○ Import from another browser
○ Import from a file
● Export to a file

FIGURE 14.6

Specify the folder from which you want to export your favorites



Select the folder that you want to export your favorites from

- Favorites
  - Favorites Bar
  - Links for United States
  - Microsoft Websites
  - MSN Websites
  - Windows Live

6. Click Next and type or browse to select a location to which to save the favorites. To store to an external source, select the external drive (such as a flash drive) letter and choose Save.
7. Choose Export when ready and then Finish. The Favorites are stored in a file named `bookmark.htm`.

Tip

It's really not necessary to export cookies to your new computer. Those files are created and deleted on-the-fly by websites you visit and are rarely "necessary" for accessing a website. But if you really want to do so, you can choose to export and import cookies. Note that if you don't copy over cookies, you'll have to re-authenticate on any sites that use cookies to store authentication information.

8. On the new Windows 8 computer, open Internet Explorer. You can press the Alt key to see the classic menus.
9. Choose File ➪ Import And Export, and in the wizard, choose Import Favorites.
10. Browse to your external drive or disc and double-click the `bookmark.htm` file.
11. Continue on through the wizard, clicking Next, Import, OK, and Finish where appropriate. When you're done, click the Favorites Center star at the left side of the toolbar. You should see all your imported favorites.

Transferring fonts

If you purchased or downloaded any TrueType or OpenType fonts and want to copy them over:

1. Open the Fonts folder on the old computer. This is typically `C:\Windows\Fonts`.
2. Copy any fonts you want to transfer to your external drive or USB flash drive. Stick with TrueType and OpenType fonts (with `.ttf` extensions) that you acquired on your own. Don't try to copy all fonts. Windows 8 already has many fonts built into it, and you don't want to replace those fonts with older versions of similar fonts.
3. After you've copied fonts to an external drive or USB flash drive, connect that drive to the Windows 8 computer.
4. Log in to an administrative user account.
5. Right-click the font file you want to add and click Install.

Wrap-Up

Transferring files and settings from an old Windows XP, Windows Vista, or Windows 7 computer is fairly easy. You can use the USB Easy Transfer cable that came with your new computer or purchase one from any computer retailer. If the old computer isn't running Windows Vista, 7, or XP, you can't use the Easy Transfer program and cable. But there are still ways to get files to the new computer, provided that you have sufficient basic skills to locate and copy files. This chapter covered the following material:

- Windows Easy Transfer is the quickest and easiest way to transfer user accounts, folders, files, and settings from an old Windows XP, Windows Vista, or Windows 7 to your new Windows 8 computer.
- You cannot transfer programs from an old computer to a new one through any means unless the programs are standalone executables. That's because most programs must be *installed* — not transferred or copied to the computer.
- Do not install older utility programs (virus scanners, firewalls, file managers, and such) on Windows 8. Such programs are designed to work with a specific version or family of Windows, and may cause problems if installed on Windows 8.

- Windows Easy Transfer, which comes free with Windows 8, provides the quickest and easiest method of transferring user accounts, files, and settings from a Windows XP, Windows Vista, or Windows 7 computer to a new Windows 8 computer.
- To start Windows Easy Transfer, open the Charms Bar, click Search, type **trans**, and click Windows Easy Transfer. To transfer files, just read the Windows Easy Transfer instructions and choose options that make sense for your equipment.
- To transfer files from earlier versions of Windows, copy those files to an external drive or disc. Then copy from that same drive or disc onto the Windows 8 computer.

CHAPTER 15

Customizing Startup Options

IN THIS CHAPTER

Understanding applications and services

Starting programs automatically

Preventing programs from auto starting

Managing services

Bypassing the login page

A computer is basically a machine that's designed to do one thing: run programs. There are more than 100,000 different programs and apps that can run on your computer. Nobody owns them all or needs them all. But there are certainly many to choose from.

Your computer already has many programs and apps installed on it. Many are programs that you can start at will from icons on the Start screen or desktop. Some programs start automatically when you log in. Often, these programs run in a window, as an icon on the taskbar, or both.

Another type of program starts automatically as soon as you start your computer. These are referred to as *services*, and services are most often part of the Windows operating system itself or programs that control hardware or other underlying functions. Services generally don't have program windows or have taskbar buttons on your desktop. In fact, you would likely never know that services existed unless you went looking for them.

This chapter is about controlling exactly which programs and services do, and don't, start automatically when you first start your computer and Windows. By controlling these programs, you can streamline the Windows startup and fix problems with performance or function. We don't cover new Windows 8 apps too much in this chapter as they are covered in more detail in other chapters, including Chapters 2, 8, 12, and 37.

First Things First

First, we need to make a distinction between application programs and services. For the purposes of this chapter, we refer to such a program as an application program (or *application*).

These are programs that, when open, usually have a program window on your desktop and a rectangular button in the taskbar. Typically, you open and use such a program to perform some specific task, such as browse the web or perform spreadsheet tasks. Then you close the program when you've finished that task. To close such a program, you can typically click the Close (X) button in the program's upper-right corner or right-click the program's taskbar button and choose Close. You can reopen the program at any time by clicking its icon on the Start screen. Windows 8 apps can be closed by grabbing the top edge of their window and dragging down until the app resizes to a small rectangle. Release the mouse button and the app closes.

Even though most application programs run in a window and live on the taskbar, not all do. Windows 8 apps run as standalone programs that do not show up on the Windows taskbar. They are accessible as tiles from the Windows 8 Start screen. Many utility applications appear as icons on the Notification area (tray). The Ultramon program, for example, runs as an icon on the tray and provides special features for using multiple displays. Typically, when you rest the mouse pointer on a tray icon such as Ultramon's, a tooltip appears, showing the name of the program that the icon represents. Clicking or double-clicking such an icon often opens a dialog box or similar window. Right-clicking such an icon often displays a list of things you can do with the program.

In many cases, you can control whether a program's icon appears in the tray. You can also control which of the Windows 8 tray icons appear in the tray. See Chapter 13, "Personalizing the Desktop" to learn how to customize the taskbar and tray.

Services are also application programs, but services generally do not provide any means for the user to interact with them. Many services are actually included as part of the operating system. For example, the Windows Time service provides time synchronization functions for Windows, enabling it, for example, to set the computer's time from a remote time server. The DHCP Client service is another example of a service. It is responsible for obtaining an IP address for your computer when the computer starts up, enabling your computer to participate on the network.

Neither the Windows Time service nor the DHCP Client service provides any means for you to interact with them; they do their thing in the background with no input from you. In contrast, the Windows Firewall service does provide a means for you to interact with it. Even so, Windows Firewall is still a service, and most of the time, you don't interact with it. Services such as this that provide a means for user interaction are by far the exception rather than the rule.

Why are we telling you about services and how they differ from other programs? In most cases, you won't need to manage services or control their startup, but in some situations, doing so is necessary. Most of the time, you'll be more concerned with which application programs start automatically. But it's important for you to understand the difference so that you can make an educated decision as to how to handle services. One of the main focuses of this chapter is to help you understand how to make programs start automatically that normally don't do so, how to stop certain programs from starting automatically, and why you would want to do either. Let's start with how you make programs start automatically.

Starting Programs Automatically

If you always use a certain program when you start your computer, you can configure Windows to start that program automatically. For example, maybe you use Microsoft Outlook 2010 all the time for your e-mail and want it to open as soon as you log in to the computer so that you don't have to start it yourself.

CAUTION

Be aware that some programs provide an option during the program setup wizard to turn on or off auto start features. For many programs that rely on constant network and/or Internet connectivity, you can almost bet that the program will need to auto start each time Windows starts. You may not need other programs, such as graphics tools, to start every time Windows launches, so consider de-selecting the option to have the program start when Windows starts.

Using the Startup folder

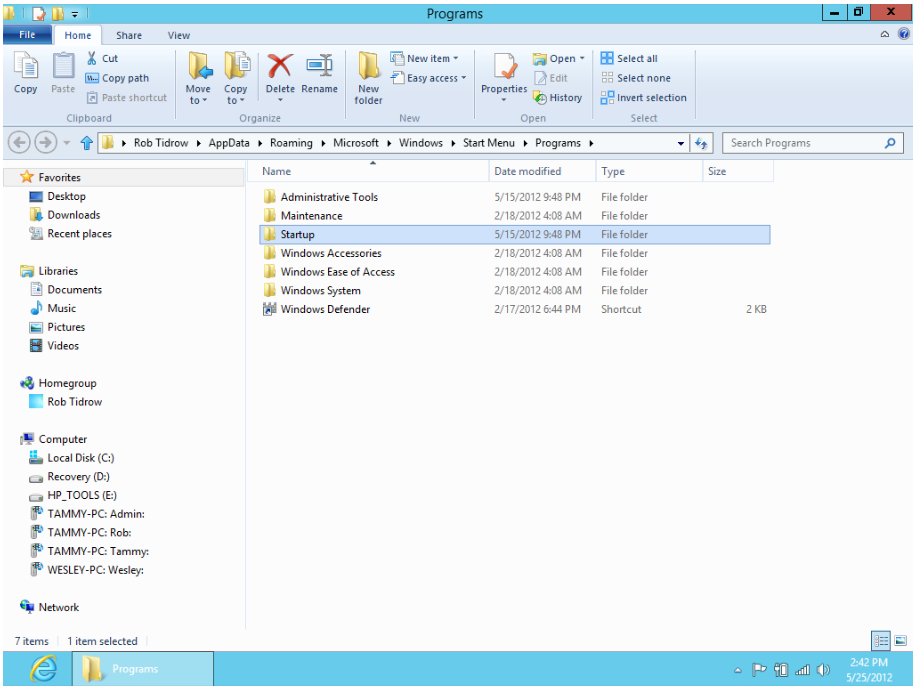
You have a couple of ways to make programs start automatically when you log in. In previous versions of Windows, you could access the Start menu from the Start button and All Programs menu (for example in Windows 7). Windows 8 does not provide this type of access to it. Similarly, you cannot use Search to directly find it.

Fortunately, you can pin the Startup folder to the Start screen so you can quickly add or remove programs from it. To do that, use these steps:

1. Display the desktop.
2. Press Windows+X and then click Run.
3. Type **shell:startup** and click OK. File Explorer opens so you can see the contents of the Startup folder. Click the Programs folder in the Address bar to go back one subfolder so you can see the Startup subfolder listed in the main Explorer window. Figure 15.1 shows an example Startup folder. You also can enter the following path, using your user profile name in the *`<username>`* spot:

FIGURE 15.1

Startup folder


Programs
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Rob Tidrow ▸ AppData ▸ Roaming ▸ Microsoft ▸ Windows ▸ Start Menu ▸ Programs ▸
Search Programs
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
WESLEY-PC: Wesley:
Network
7 items
1 item selected
Programs
2:42 PM
5/25/2012

Name	Date modified	Type	Size
Administrative Tools	5/15/2012 9:48 PM	File folder	
Maintenance	2/18/2012 4:08 AM	File folder	
Startup	5/15/2012 9:48 PM	File folder	
Windows Accessories	2/18/2012 4:08 AM	File folder	
Windows Ease of Access	2/18/2012 4:08 AM	File folder	
Windows System	2/18/2012 4:08 AM	File folder	
Windows Defender	2/17/2012 6:44 PM	Shortcut	2 KB

`C:\Users\`*`<username>`*`\AppData\Roaming\Microsoft\Windows\Start Menu\Programs`

4. Right-click the Startup folder and choose Pin To Start on the context menu, as shown in Figure 15.2. A shortcut of the folder appears in the current folder view.
5. Display the Start screen by pressing the Windows Key or showing the Charms Bar and clicking Start.
6. Scroll to the far right to see the Startup folder pinned to the Start screen, as shown in Figure 15.3.

FIGURE 15.2

Pin the Startup folder to the Start screen.

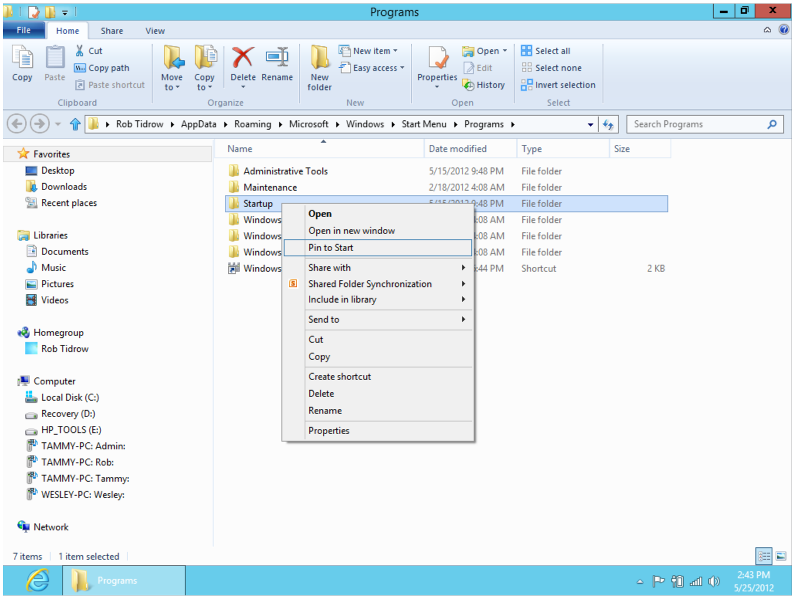
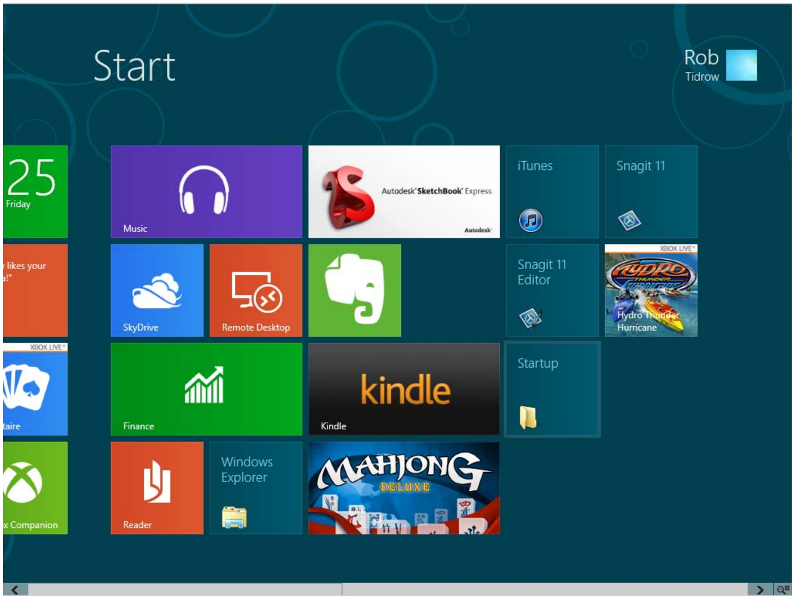

Programs
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Rob Tidrow ▸ AppData ▸ Roaming ▸ Microsoft ▸ Windows ▸ Start Menu ▸ Programs ▸
Search Programs
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
WESLEY-PC: Wesley:
Network
Name
Date modified
Type
Size
Administrative Tools
5/15/2012 9:48 PM
File folder
Maintenance
2/18/2012 4:08 AM
File folder
Startup
File folder
Windows
File folder
Windows
File folder
Windows
File folder
Windows
Shortcut
2 KB
Open
Open in new window
Pin to Start
Share with
Shared Folder Synchronization
Include in library
Send to
Cut
Copy
Create shortcut
Delete
Rename
Properties
7 items
1 item selected
Programs
2:43 PM
5/25/2012

FIGURE 15.3

Startup folder pinned to the Start screen


Start
Rob
Tidrow
25
Friday
Music
Autodesk SketchBook Express
iTunes
Snagit 11
likes your
SkyDrive
Remote Desktop
Snagit 11 Editor
Hydro Thunder Hurricane
Finance
kindle
Kindle
Startup
Companion
Reader
Windows Explorer
MAHJONG DELUXE

You can now open the Startup folder to view and manage programs that start when you boot up Windows. If you want a program to start automatically for you, put a shortcut for the program in your Startup folder. If you want a program to start automatically for everyone, you can instead put it in the Startup folder for all users.

If you're already logged in to your user account, the steps to open your own Startup folder are easy:

1. Display the Start screen.
2. Scroll over until you see the Startup folder tile on the screen.
3. Double-click that Startup icon. It opens as a folder on the desktop.

To make an application program auto start, right-drag (drag with the right mouse button) an icon for that program into Startup folder and drop it there; then choose Create Shortcuts Here.

CAUTION

Keep in mind that the more programs you add to the folder, the longer it will take for your computer to start. So don't get carried away and put all your favorite programs in there. One or two should be sufficient.

When you've finished, close the Startup folder. Windows Defender may show a message alerting you to the fact that your startup options have changed. No cause for alarm. In this case the message is superfluous because you intentionally changed your startup programs. Defender doesn't know that, however. It's just doing one of its many jobs, which in this situation is to keep you informed of changes to your startup options.

TIP

To add a program's shortcut to the Startup folder for all users so that it starts for everyone, use the same process as described previously except drag the icon to the All Users Startup folder rather than your personal Startup folder.

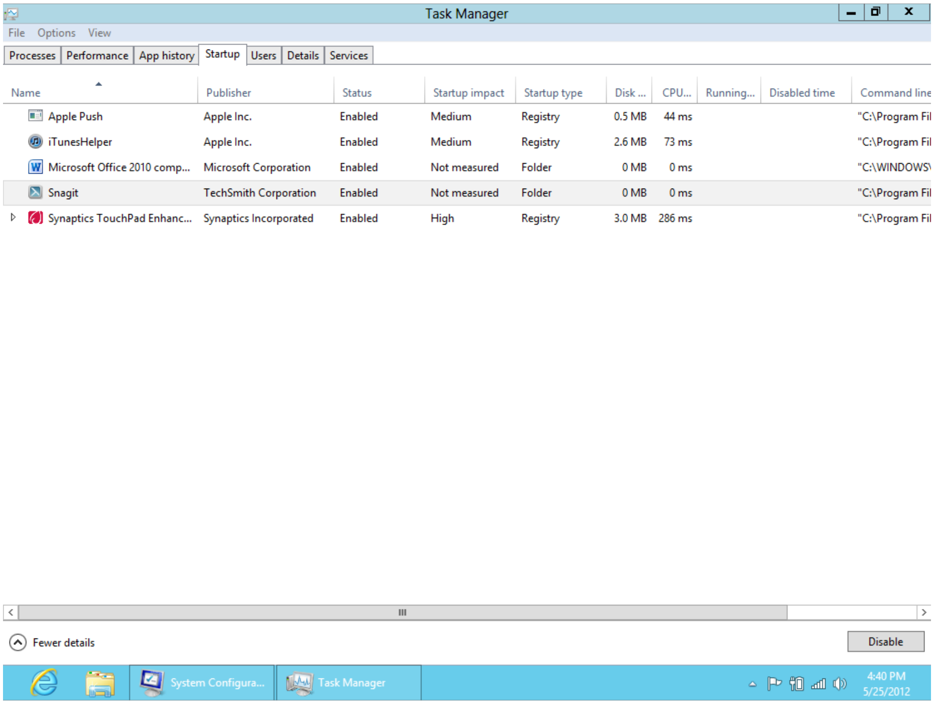
Using the Task Manager Startup tab

Windows 8 introduces a new Task Manager to help you manage and monitor running programs and services. Chapter 42, "Managing Programs and Processes," discusses Task Manager in detail, but it's worthwhile to mention now that you can view and disable properties of programs in your Startup folder with the Startup tab.

Figure 15.4 shows an example of a Startup tab. Notice the Status column. It tells you if a program is enabled or disabled. To disable a program, right-click the row on which it appears and click Disable. You also can click a program and click the Disable button at the bottom of the Task Manager window.

FIGURE 15.4

Startup tab of Task Manager



Name	Publisher	Status	Startup impact	Startup type	Disk ...	CPU...	Running...	Disabled time	Command line
Apple Push	Apple Inc.	Enabled	Medium	Registry	0.5 MB	44 ms			"C:\Program Fil
iTunesHelper	Apple Inc.	Enabled	Medium	Registry	2.6 MB	73 ms			"C:\Program Fil
Microsoft Office 2010 comp...	Microsoft Corporation	Enabled	Not measured	Folder	0 MB	0 ms			"C:\WINDOWS
Snagit	TechSmith Corporation	Enabled	Not measured	Folder	0 MB	0 ms			"C:\Program Fil
Synaptics TouchPad Enhanc...	Synaptics Incorporated	Enabled	High	Registry	3.0 MB	286 ms			"C:\Program Fil

An interesting part of the Startup tab is the Startup Impact column. That column shows you the relative impact on your system when Windows starts a program automatically.

Stopping auto start applications

Should you ever change your mind about auto start applications, you just need to reopen that Startup folder for your user account. Then delete the shortcut icon for any program you don't want to auto start. Or, if you moved it from another location, move it back (out of the Startup folder). However, not all programs that auto start will be in the Startup folder for your user account. Some may be in the Startup folder for all users. (Still others will be in other locations.)

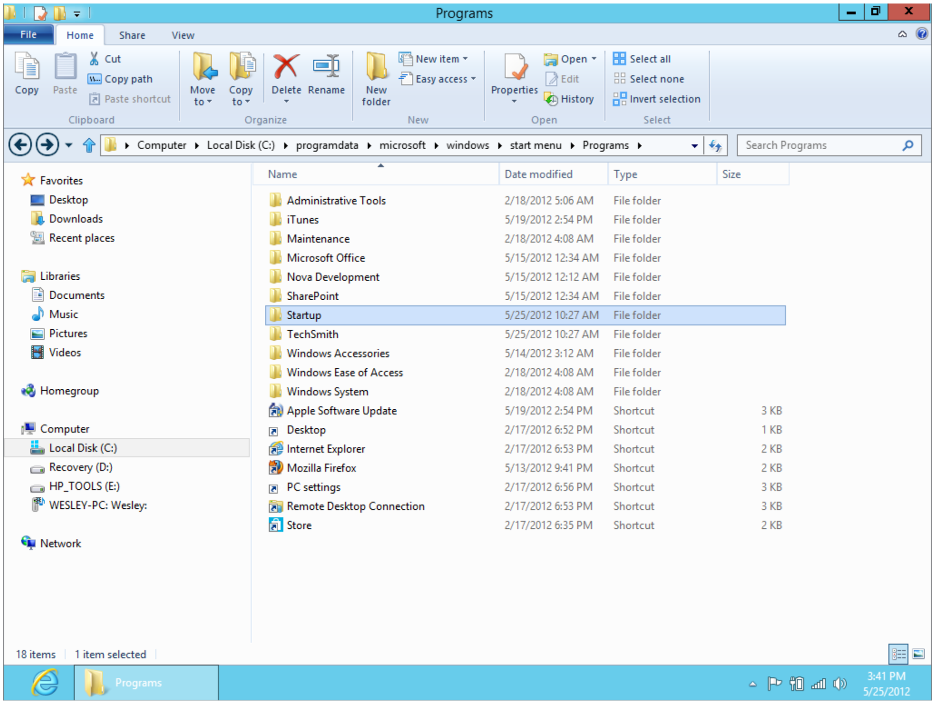
To view, and optionally remove, programs that start automatically in all user accounts, you need to get to the all users Startup folder, found at the following location:

```
C:\ProgramData\Microsoft\Windows\Start Menu\Programs
```

You may need administrative privileges to make changes to that folder, so be prepared to enter an administrative password if you're working from a standard account. Figure 15.5 shows an example of the All Users Startup folder. You can open the Startup folder from within this folder view.

FIGURE 15.5

Open the Startup folder for all user accounts.


Programs
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Computer
Local Disk (C:)
programdata
microsoft
windows
start menu
Programs
Search Programs
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
WESLEY-PC: Wesley:
Network
18 items
1 item selected
Programs
3:41 PM
5/25/2012

Name	Date modified	Type	Size
Administrative Tools	2/18/2012 5:06 AM	File folder	
iTunes	5/19/2012 2:54 PM	File folder	
Maintenance	2/18/2012 4:08 AM	File folder	
Microsoft Office	5/15/2012 12:34 AM	File folder	
Nova Development	5/15/2012 12:12 AM	File folder	
SharePoint	5/15/2012 12:34 AM	File folder	
Startup	5/25/2012 10:27 AM	File folder	
TechSmith	5/25/2012 10:27 AM	File folder	
Windows Accessories	5/14/2012 3:12 AM	File folder	
Windows Ease of Access	2/18/2012 4:08 AM	File folder	
Windows System	2/18/2012 4:08 AM	File folder	
Apple Software Update	5/19/2012 2:54 PM	Shortcut	3 KB
Desktop	2/17/2012 6:52 PM	Shortcut	1 KB
Internet Explorer	2/17/2012 6:53 PM	Shortcut	2 KB
Mozilla Firefox	5/13/2012 9:41 PM	Shortcut	2 KB
PC settings	2/17/2012 6:56 PM	Shortcut	3 KB
Remote Desktop Connection	2/17/2012 6:53 PM	Shortcut	3 KB
Store	2/17/2012 6:35 PM	Shortcut	2 KB

The All Users Startup folder works just like the Startup folder for a single user account. If you want a program to auto start in all user accounts, drag that program's icon into the folder. If you want to stop a program from auto starting in all user accounts, delete its icon from that Startup folder. But again, stick with programs you know. Removing programs from the All Users Startup folder at random could have unpleasant consequences that you weren't expecting.

Using the System Configuration Tool to Control Startup

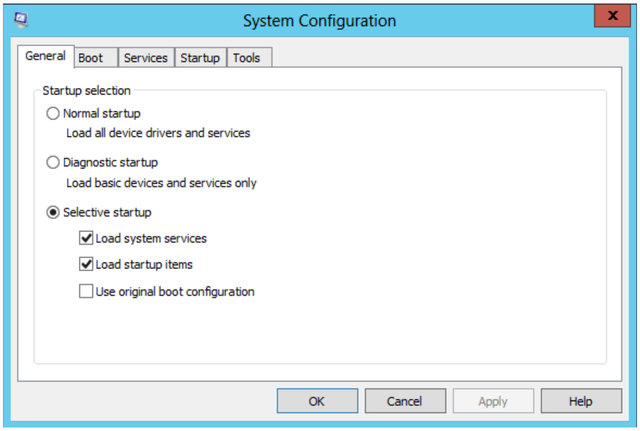
One tool that has existed in multiple versions of Windows that lets you control program startup is the System Configuration program. That program is also available in Windows 8. To open System Configuration, open the Control Panel, click Large Icons or Small Icons from the View By drop-down list, and click Administrative Tools. Double-click the System Configuration shortcut.

If you are at the Windows Start screen, type **MSCONFIG**. Click the Msconfig icon in the Apps window.

Figure 15.6 shows the System Configuration program window.

FIGURE 15.6

System Configuration program window



Startup selection

○ Normal startup
Load all device drivers and services

○ Diagnostic startup
Load basic devices and services only

● Selective startup

☑ Load system services

☑ Load startup items

☐ Use original boot configuration

The General tab, shown in Figure 15.6, offers three options for controlling startup:

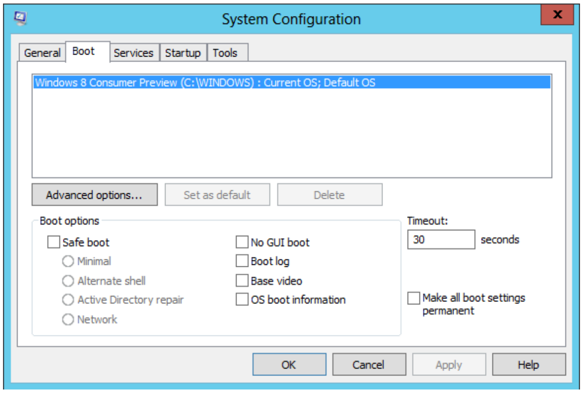
- **Normal Startup:** Start Windows normally. All items that normally start automatically are started.
- **Diagnostic Startup:** Load only basic device drivers and operating system services but not other services or programs. Use this option to troubleshoot problems with Windows startup that might be caused by a third-party service, device driver, or program.

- **Selective Startup:** Choose which types of items to start automatically. Start Windows with basic devices and services, and optionally other system services and startup programs.

The Boot tab, shown in Figure 15.7, lets you control how Windows boots. The large list box lists all the operating system boot selections. If Windows 8 is the only operating system on the computer, it will be the only one listed in the text box. If you have a dual-boot system (for example, with Windows 7 and Windows 8 on the same computer in different partitions), those additional operating system instances will also be listed. Click an instance and then click Set As Default to make that operating system boot by default when the computer starts.

FIGURE 15.7

The Boot tab



Windows 8 Consumer Preview (C:\WINDOWS) : Current OS; Default OS

☐ Safe boot
○ Minimal
○ Alternate shell
○ Active Directory repair
○ Network
☐ No GUI boot
☐ Boot log
☐ Base video
☐ OS boot information

Timeout: 30 seconds

☐ Make all boot settings permanent

The other options under the Boot Options group enable you to configure options for a safe boot so that the next time you start Windows, it boots with the specified safe boot option. You can also set other boot options. Because you likely will use these options rarely, if ever, we point you to the Help content rather than cover them here. Just click the Help button on the Boot tab to view an explanation of these options.

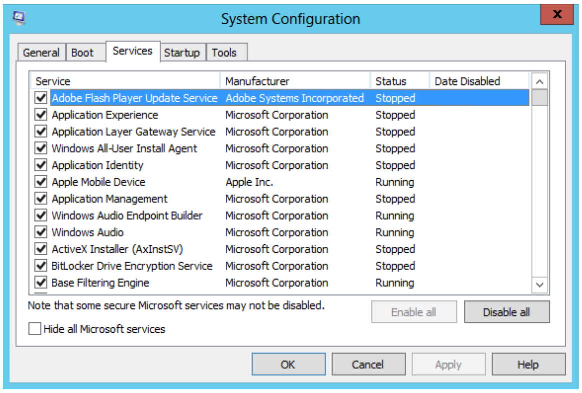
NOTE

Use the option Make All Boot Settings Permanent to have the settings apply every time you boot the computer.

The Services tab (see Figure 15.8) gives you a means to disable services so that they do not start when Windows boots. This tab also shows the current state of the services on the computer. Selecting the check box beside a service indicates that the service is enabled. You can disable a service by clearing its check box. If you want to view only third-party services, select the Hide All Microsoft Services check box. This helps you identify services that are not part of the Windows 8 operating system.

FIGURE 15.8

The Services tab


System Configuration
General
Boot
Services
Startup
Tools
Enable all
Disable all
OK
Cancel
Apply
Help

	Service	Manufacturer	Status	Date Disabled
☑	Adobe Flash Player Update Service	Adobe Systems Incorporated	Stopped	
☑	Application Experience	Microsoft Corporation	Stopped	
☑	Application Layer Gateway Service	Microsoft Corporation	Stopped	
☑	Windows All-User Install Agent	Microsoft Corporation	Stopped	
☑	Application Identity	Microsoft Corporation	Stopped	
☑	Apple Mobile Device	Apple Inc.	Running	
☑	Application Management	Microsoft Corporation	Stopped	
☑	Windows Audio Endpoint Builder	Microsoft Corporation	Running	
☑	Windows Audio	Microsoft Corporation	Running	
☑	ActiveX Installer (AxInstSV)	Microsoft Corporation	Stopped	
☑	BitLocker Drive Encryption Service	Microsoft Corporation	Stopped	
☑	Base Filtering Engine	Microsoft Corporation	Running	

Note that some secure Microsoft services may not be disabled.

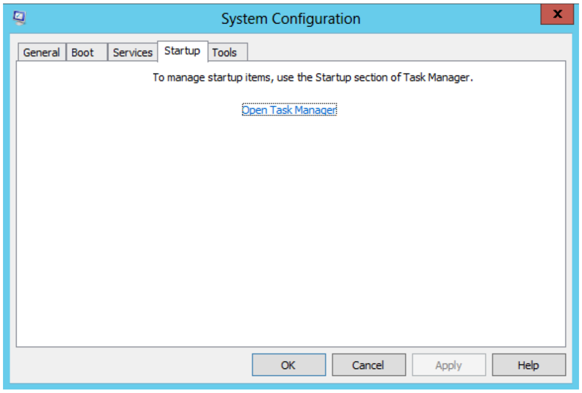
☐ Hide all Microsoft services

In general, you should avoid disabling services unless you know exactly what the service does and what the consequences of disabling it will be. Usually, you want to disable a service only if a tech support engineer or some troubleshooting documentation has directed you to do so.

The Startup tab is pretty useless in Window 8. It simply has a link (see Figure 15.9) to the new and improved Task Manager's Startup tab, which was discussed earlier in the chapter (refer to Figure 15.5).

FIGURE 15.9

The Startup tab


System Configuration
General
Boot
Services
Startup
Tools
OK
Cancel
Apply
Help

To manage startup items, use the Startup section of Task Manager.

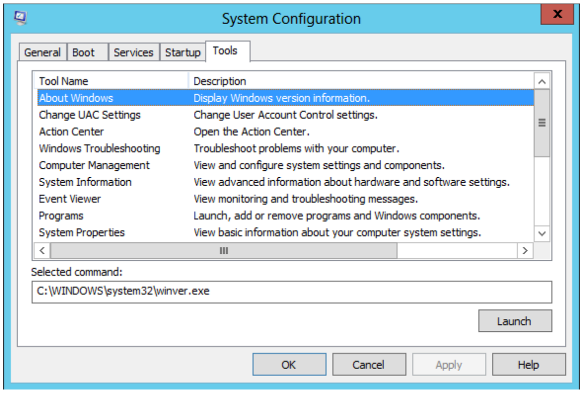
Open Task Manager

Often, program developers design their programs to start from the registry instead of the Startup folder when they don't want the user to be able to turn off the program without uninstalling it. This is typical for antivirus programs and other utility programs. If you are trying to turn off a program and you don't find it in one of the Startup folders, there is probably an entry for the program in the registry that causes it to start automatically.

The Tools tab (see Figure 15.10) gathers a selection of useful tools for troubleshooting problems with your computer and compiling more information about programs. Just click a tool and click Launch to open the tool.

FIGURE 15.10

The Tools tab



Tool Name	Description
About Windows	Display Windows version information.
Change UAC Settings	Change User Account Control settings.
Action Center	Open the Action Center.
Windows Troubleshooting	Troubleshoot problems with your computer.
Computer Management	View and configure system settings and components.
System Information	View advanced information about hardware and software settings.
Event Viewer	View monitoring and troubleshooting messages.
Programs	Launch, add or remove programs and Windows components.
System Properties	View basic information about your computer system settings.

Selected command:

C:\WINDOWS\system32\winver.exe

After you make changes to configuration settings in the System Configuration tool, you need to click OK and then restart the computer to make the changes take effect.

Services Snap-In

Windows 8 includes a system management framework tool called the Microsoft Management Console (MMC). The MMC provides access to various *snap-ins*, with each snap-in providing options for different configurations or an interface to manage items such as policies, accounts, and so on. One of these snap-ins is named Services.msc. It's not a user-friendly program; rather, it is designed for professionals. Beginners and casual users are better off sticking with the Startup folders to work with auto start programs. Even so, beginners can start to understand how some of the underlying pieces of Windows work by looking through the Services console and checking out what some of the services do.

NOTE

If you want to make any changes in the Services snap-in, log out of any standard accounts and in to an account that has administrative privileges. Or, right-click Services and choose Run As Administrator.

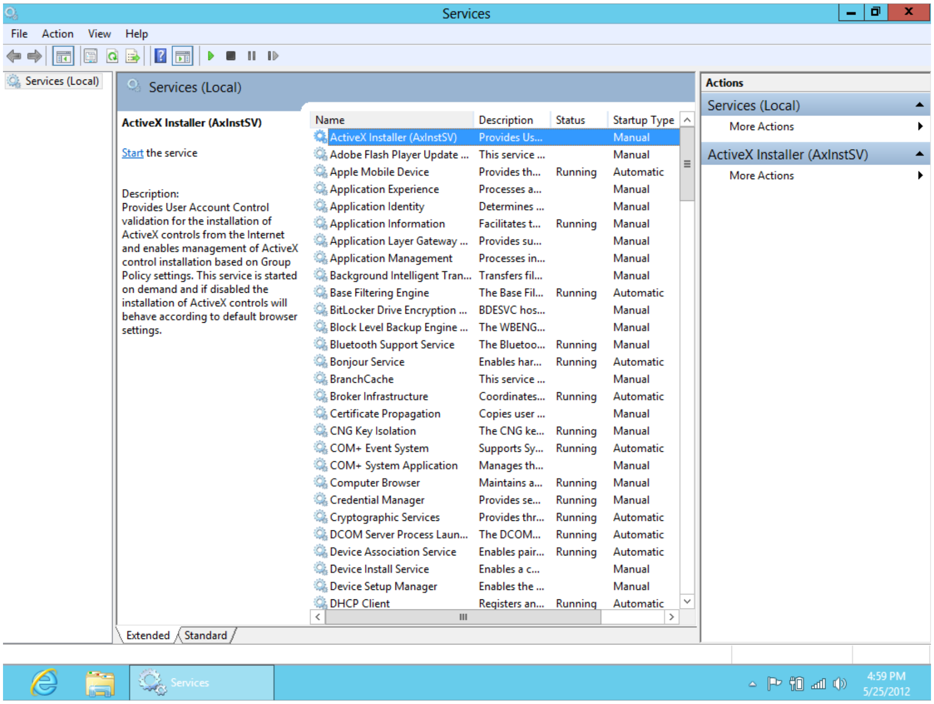
To start the Services snap-in, press Windows+X on the desktop, click Run, and type **SERVICES.MSC**. Click OK. When the Services snap-in is open, use the View menu options to choose how you want to view icons. Figure 15.11 shows how things are displayed in the Detail view. The toolbar contains a couple of buttons for showing and hiding optional Console Tree and Action panes. (Both are shown in Figure 15.11.) Extended and Standard tabs are near the bottom of the window. The figure shows how things look in the Extended tab.

TIP

You can also start the Services console by opening it in the Administrative Tools folder of the Control Panel. Another way is to type **SERVICES.MSC** while at the Windows Start screen, and click View Local Services in the Apps window.

FIGURE 15.11

Services snap-in



ActiveX Installer (AxInstSV)

Start the service

Description:
Provides User Account Control validation for the installation of ActiveX controls from the Internet and enables management of ActiveX control installation based on Group Policy settings. This service is started on demand and if disabled the installation of ActiveX controls will behave according to default browser settings.

Name	Description	Status	Startup Type
ActiveX Installer (AxInstSV)	Provides Us...		Manual
Adobe Flash Player Update ...	This service ...		Manual
Apple Mobile Device	Provides th...	Running	Automatic
Application Experience	Processes a...		Manual
Application Identity	Determines ...		Manual
Application Information	Facilitates t...	Running	Manual
Application Layer Gateway ...	Provides su...		Manual
Application Management	Processes in...		Manual
Background Intelligent Tran...	Transfers fil...		Manual
Base Filtering Engine	The Base Fil...	Running	Automatic
BitLocker Drive Encryption ...	BDESVC hos...		Manual
Block Level Backup Engine ...	The WBENG...		Manual
Bluetooth Support Service	The Bluetoo...	Running	Manual
Bonjour Service	Enables har...	Running	Automatic
BranchCache	This service ...		Manual
Broker Infrastructure	Coordinates...	Running	Automatic
Certificate Propagation	Copies user ...		Manual
CNG Key Isolation	The CNG ke...	Running	Manual
COM+ Event System	Supports Sy...	Running	Automatic
COM+ System Application	Manages th...		Manual
Computer Browser	Maintains a...	Running	Manual
Credential Manager	Provides se...	Running	Manual
Cryptographic Services	Provides thr...	Running	Automatic
DCOM Server Process Laun...	The DCOM...	Running	Automatic
Device Association Service	Enables pair...	Running	Automatic
Device Install Service	Enables a c...		Manual
Device Setup Manager	Enables the ...		Manual
DHCP Client	Registers an...	Running	Automatic

Clicking the Extended tab opens a new pane at the left side of the program window that shows detailed information about any service name you click. It also provides options to start a service that's not running, or to stop or restart the service if it's not running correctly.

NOTE

Because of enhanced security in Windows 8, you do not have as much leeway in starting and stopping services as you did in earlier Windows versions. Some services cannot be stopped at all if you do not have administrative privileges.

If you scroll through the list of services, you'll probably see quite a few. Exactly which services are listed will vary from one computer to the next. Few, if any, of the services will have any meaning to the average computer user. These things are really only of use to professional programmers, network administrators, support technicians, or other experienced professionals. What follows is mainly for those folks. We don't summarize what each service does because doing so would eat up several pages and only repeat the information that's already in the Description column.

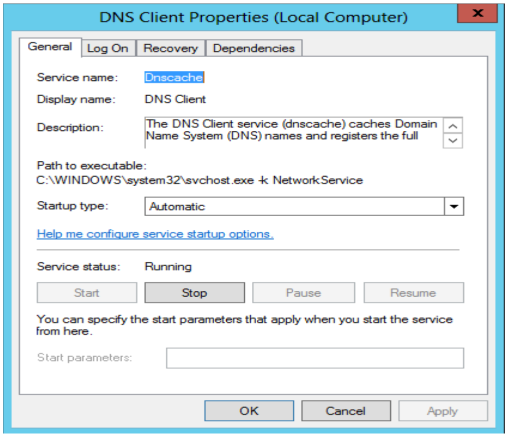
The Status column shows Running for those services that are currently running. It shows nothing for services that aren't running. The Startup Type column shows whether the service is configured to run automatically, if at all. Common settings are:

- **Automatic (Delayed Start):** The service starts automatically, but only after a delay in time to enable other dependent services to start.
- **Automatic:** The service starts automatically when the computer starts or when a user logs in.
- **Manual:** The service doesn't start automatically. You can start the service, however, by right-clicking the service name and choosing Start or by choosing Start from the Action menu.
- **Disabled:** The service is disabled and must be enabled from the Properties dialog box before it can be started.

To get more information about a service or change its Startup type, right-click the service name and choose Properties. You see a dialog box like the one in Figure 15.12.

FIGURE 15.12

Properties for the DNS client service



Service name: Dnscache

Display name: DNS Client

Description: The DNS Client service (dnscache) caches Domain Name System (DNS) names and registers the full

Path to executable:
C:\WINDOWS\system32\svchost.exe -k NetworkService

Startup type: Automatic

Help me configure service startup options.

Service status: Running

You can specify the start parameters that apply when you start the service from here.

Start parameters:

What Does the DNS Client Do?

IP addresses are what routers (networking hardware that moves data around) use to locate devices such as servers on the Internet and send traffic back and forth between devices. The DNS client service is called a *DNS resolver* and is critical for networking because it resolves hostnames such as `www.wiley.com` to IP addresses such as `208.215.179.146`. When you type a URL into your web browser and press Enter, the DNS service contacts a Domain Name Server and gives it the hostname (in this example, `www.wiley.com`), and the name server responds with the IP address (or addresses) that corresponds to the hostname. Then, the traffic (in this case, the request for the specified website) gets routed on the Internet to the server based on its IP address. Of course, you can browse the web for the rest of your life without knowing anything about DNS or IP addresses.

The options you see in Figure 15.12 are typical of the items listed in the Services snap-in. The Description text box provides a description of the services and tells what will happen if you disable or stop the service. The Path To Executable text box shows the location and name of the program that provides the service. The Startup Type option provides the Automatic, Manual, and Disabled options.

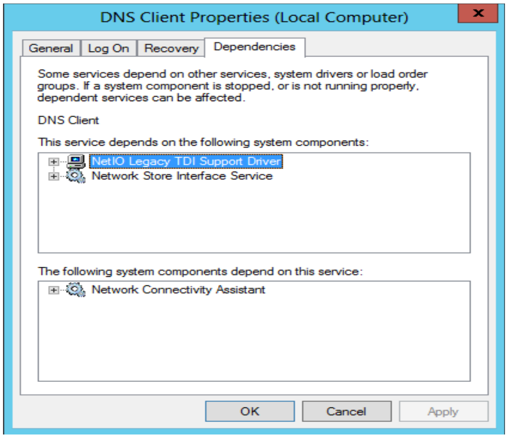
The buttons let you stop, pause, resume, or start the service. Some programs accept parameters, which you can add to the Start Parameters text box.

The Log On tab provides options for granting rights to services that need permissions to run. The Recovery tab provides options for dealing with problems when a service fails to start.

The Dependencies tab (see Figure 15.13) is one of the most important of the bunch because it specifies which services the current service depends on (if any) and which services depend on the current service. For example, DNS is a TCP/IP thing (which is the protocol used by the Internet and most modern local networks). If a service isn't starting and you can't figure out why, seeing what services the current one depends on might provide a clue. If the dependent service isn't running, the original one you're looking at can't start, so you need to go to its dependent service and make sure it's starting.

FIGURE 15.13

The DNS Client service Dependencies tab



Some services depend on other services, system drivers or load order groups. If a system component is stopped, or is not running properly, dependent services can be affected.

DNS Client

This service depends on the following system components:

- NetIO Legacy TDI Support Driver
- Network Store Interface Service

The following system components depend on this service:

- Network Connectivity Assistant

If you're interested in learning more about TCP/IP and how the Internet works, a Windows book isn't the best place to look. Any book on TCP/IP, however, or any book or course that prepares you for MCSA (Microsoft Certified Systems Administrator) or MCSE (Microsoft Certified Systems Engineer) certification would explain all of that in depth. For broader technical coverage of services, consult a technical reference such as Microsoft TechNet at `http://technet.microsoft.com`.

For more information on Microsoft certifications, see `http://www.microsoft.com/learning/en/us/certification/mcse.aspx`.

Bypassing the Login Page

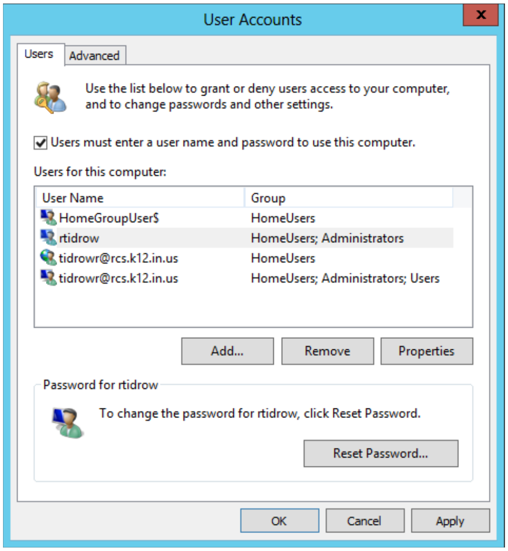
This is one of those little Windows secrets everyone likes to know about but should be cautious about using. It lets you bypass the login screen and start up Windows 8 in a specific user account automatically. Although it does save you one click at startup, it means anyone who sits at your computer can just turn on the power switch and have full access to everything in your user account. So don't do this if you want to keep other people out of your user account.

This trick requires administrative privileges. So you need to know the password or you need to log in to an administrative account first. Here are the steps:

1. At the desktop, press Windows+X, click Run, and enter **netplwiz**. Or you can open the Charms Bar, click Search, and enter **netplwiz**. Click the Netplwiz application on the Apps screen. The User Accounts dialog box appears, as shown in Figure 15.14.
2. Grant permission or enter an administrative password if prompted.
3. Clear the Users Must Enter A User Name And Password To Use This Computer check box.
4. Click Apply.
5. In the dialog box that opens, type the name of the user account to which you want to log in automatically.
6. If that user account requires a password, type the password once in the Password box and then again in the second box for confirmation. If the user account isn't password-protected, leave both boxes empty.
7. Click OK in each open dialog box.

FIGURE 15.14

The User Accounts dialog box



Use the list below to grant or deny users access to your computer, and to change passwords and other settings.

☑ Users must enter a user name and password to use this computer.

Users for this computer:

User Name	Group
HomeGroupUser$	HomeUsers
rtidrow	HomeUsers; Administrators
tidrowr@rcs.k12.in.us	HomeUsers
tidrowr@rcs.k12.in.us	HomeUsers; Administrators; Users

Password for rtidrow

To change the password for rtidrow, click Reset Password.

That's it. The next time you restart your computer, there will be no login page. You are taken directly to your user account. If there are other user accounts on the computer, and you want to let another user log in, log out of your account (click the Start button, the arrow next to the lock symbol, and choose Log Off). You're taken to the login page, which works normally. For example, if you want to get into a password-protected administrative account, you'll still click that account's icon and will have to enter the correct password.

If you ever change your mind about doing this, just repeat Steps 1 and 2 in the preceding list. This time, however, select the Users Must Enter A Username And Password To Use This Computer check box and click OK.

Troubleshooting Startup

Many things can prevent Windows from starting properly. There is no simple solution to the problem because too many things might be wrong. Typically, you need a professional to fix such problems. But we can tell you a few things that even the average user might try to get things going again.

Get rid of disabled devices

If your computer contains a hardware device that Windows 8 can't use, you should still be able to get to the desktop. But each time you do, you'll see a notification message about a device being disabled. That can get tiresome. If you manually disable the device through Device Manager, you won't see that message anymore. Also, it should take a little less time for Windows 8 to start.

CAUTION

Don't take wild guesses here. If you disable a hardware device you really need, you might not be able to start Windows 8 at all! If in doubt, it's better to take the computer into a repair shop and let the pros figure it out.

To disable a device, you need to first log in to a user account that has administrative privileges. Then press Windows+X and click Device Manager on the Power menu. Expand the category to which the device belongs. If you're not sure which category to look in, try the Other Devices category. You'll be looking for a device whose icon shows an exclamation point in a tiny yellow triangle. After you find the device, right-click its name and choose Disable.

When you've disabled the device, the yellow icon changes to a white downward-pointing arrow. That means the device is disabled and Windows 8 won't try to reinstall it on future bootups, which should mean a slightly quicker boot-up time and no irritating message about the disabled device.

When Windows won't start at all

If Windows won't start at all, try to start Windows 8 in Safe Mode. This is a special mode in which Windows 8 loads only the minimum services, drivers, and programs it needs to get going. Getting to Safe Mode isn't always easy. Read Chapter 8, "Troubleshooting Startup Problems," on how to enable Safe Mode in Windows 8 and how to boot into it once it's enabled.

Wrap-Up

This chapter has covered all the different ways you can control which programs do, and don't, automatically start when Windows first starts up or when you first log in to your Windows user account.

- Some programs have their own built-in options for choosing whether the program starts automatically and appears in the Notification area.
- You can start any application program automatically, or even open a folder automatically, by adding a shortcut for the program to the Startup folder.
- The full set of services that can be started and stopped automatically is listed in the `Services.msc` snap-in.
- The `Services.msc` snap-in is an advanced tool designed for professional Information Technology workers and network engineers. As such, it contains very little information that would be useful to the average computer user.
- You can use `netplwiz` to bypass the login page and go straight to any user account you wish.
- Safe Mode provides a means of starting Windows 8 with the fewest drivers and services. It helps you get the system started so that you can diagnose and repair the problem preventing normal startup.

CHAPTER

16

Troubleshooting Customization Problems

IN THIS CHAPTER

Troubleshooting desktop problems

Dealing with the taskbar

Bringing your display driver up to date

Setting regional and language items

Windows 8 provides several ways that users can customize their computer environment. As you customize your version of Windows, however, you may find that a setting is not what you wanted or expected. In this chapter, you learned how to set Windows desktop settings, adjust display items, and change taskbar settings.

Desktop Problems

With the exception of the Windows 8 Interface, the Windows desktop is where you'll spend most of your time. To keep it looking the way you want, here are some tips for solving common problems you might run into while configuring your desktop.

My screen is too large/small; my screen colors look awful

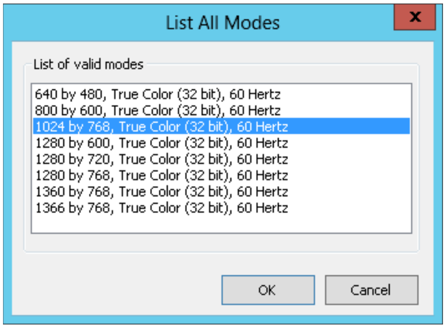
For the best view of your desktop, your screen resolution should be set to at least 1024 × 768 pixels and color depth to at least 32 bit. To change your settings, follow these steps:

1. Right-click the Windows 8 desktop and choose Screen Resolution.
2. Set the Resolution option to 1024 × 768 pixels or greater, as shown in Figure 16.1, and click Apply.

3. Click Advanced Settings ➪ Adapter ➪ List All Modes.
4. In the List All Modes list, set the mode to a True Color setting of at least 32 bit.
5. Click OK.
6. Click OK again.

FIGURE 16.1

Screen resolution settings



640 by 480, True Color (32 bit), 60 Hertz
800 by 600, True Color (32 bit), 60 Hertz
1024 by 768, True Color (32 bit), 60 Hertz
1280 by 600, True Color (32 bit), 60 Hertz
1280 by 720, True Color (32 bit), 60 Hertz
1280 by 768, True Color (32 bit), 60 Hertz
1360 by 768, True Color (32 bit), 60 Hertz
1366 by 768, True Color (32 bit), 60 Hertz

If you're not happy with the results, you can repeat the steps to try other resolutions and color depths. If the desktop doesn't fit right on the screen after you change the resolution, see the next troubleshooting section.

If you can't get your screen to show anything better than the absolute minimum, the driver for your card probably isn't compatible with Windows 8. See the section "Updating Your Display Driver," later in this chapter.

When I right-click the desktop, I don't get a Personalize option

If you can't see the Personalize option, you're most likely right-clicking something that's covering the desktop, such as an icon or program window. Click the Show Desktop button to the right of the clock in the system tray. Then you'll see, and can right-click, the actual Windows 8 desktop.

Parts of my screen are cut off or blank

When the desktop doesn't fill the screen correctly, you need to adjust settings on the monitor. You use buttons on the monitor or onscreen utilities to do that, not your mouse or keyboard. Exactly how you do it varies from one monitor to the next, but the typical scenario is to use the monitor's OSD (on-screen display) options. In particular, you need to adjust the Height, Vertical Centering, Width, and Horizontal Centering settings.

If you can't figure out how to use the monitor buttons, your only other recourse is to check the documentation that came with the monitor or notebook computer. Or search the manufacturer's website for information on that specific model of monitor or notebook computer.

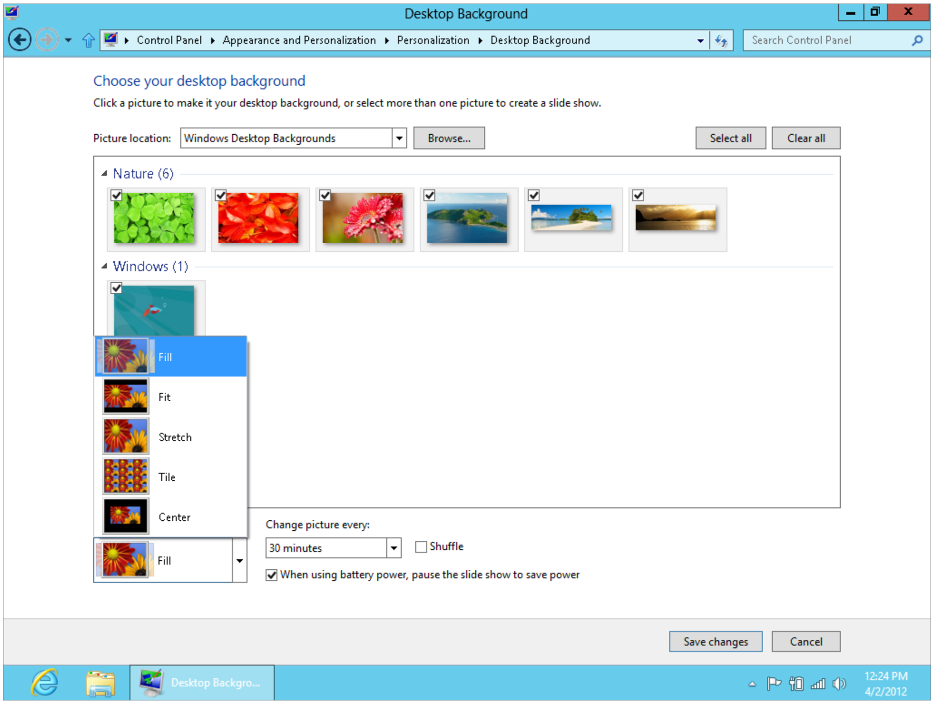
My desktop picture doesn't fit right

You can use any picture that's on your computer as the background (also called a *wallpaper*) for your desktop. Any picture that's as large as, or larger than, your screen (as defined by the Resolution setting in Display Settings) will automatically fill the screen. Smaller pictures can be centered, tiled, or stretched to fill the screen. To choose a picture and how you want it displayed, follow these steps:

1. Right-click the Windows desktop and choose Personalize.
2. In the Personalization window that opens, click the Desktop Background link.
3. Clicking the Picture Location drop-down box lists different categories of backgrounds. Selecting one of the options (such as Windows Desktop Backgrounds) in the drop-down list will display all the available backgrounds for that category. After you've selected a category, you can select the background or click the Browse button to find a different picture.
4. If the picture does not fit the desktop, choose one of the following options from the Picture Position button, as shown in Figure 16.2:
   - **Fill:** Enlarge the picture to completely fill the screen.
   - **Fit:** Match the image's width to the width of the screen.
   - **Stretch:** Stretch the picture's horizontal and vertical dimensions to match the screen's dimensions. The image could be distorted.
   - **Tile:** The picture is shown at actual size but tiled to fill the screen.
   - **Center:** The picture is shown at actual size, centered on the screen.
5. Click Save Changes.

FIGURE 16.2

Available options for setting the appearance of the desktop background



Desktop Background
Control Panel ▸ Appearance and Personalization ▸ Personalization ▸ Desktop Background
Search Control Panel
Browse...
Select all
Clear all
Nature (6)
Windows (1)
Fill
Fit
Stretch
Tile
Center
Save changes
Cancel
Desktop Backgro...
12:24 PM
4/2/2012

Choose your desktop background

Click a picture to make it your desktop background, or select more than one picture to create a slide show.

Picture location: Windows Desktop Backgrounds

Fill

Change picture every: 30 minutes

☐ Shuffle

☑ When using battery power, pause the slide show to save power

If you choose the Tile option but the picture doesn't repeat, it's because the picture is as large, or larger, than the desktop. The Tile option works only with pictures that are smaller than the desktop.

Everything is huge; I can't see all of the dialog boxes

If you get carried away in setting a larger DPI (dots per inch), you could end up in a situation in which everything is so large, you can't even get to the buttons needed to change things back to the way they were. Follow the steps in the section "Adjusting the font size (DPI)" in Chapter 13.

Icon names are too big or too small

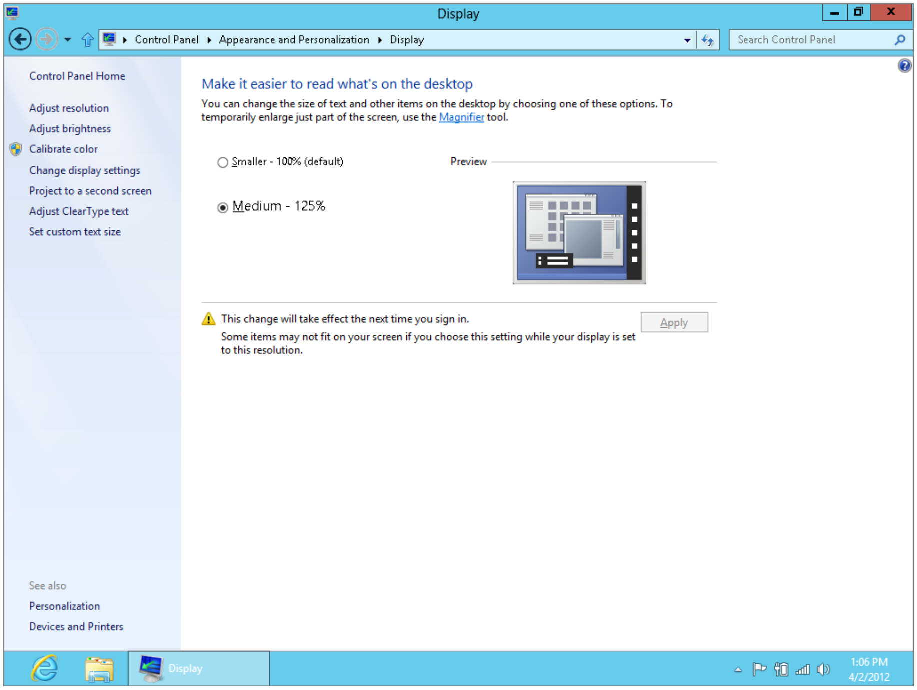
In Chapter 13, you learn how to get your screen looking just the way you want. For now, if you just want to increase the size of the text on your screen, follow these steps:

1. Right-click the desktop and choose Personalize.
2. Click Display. You should see the window shown in Figure 16.3.

3. Select one of the size settings, such as Medium – 125%, to change the size of the text and other items on your screen.
4. Click Apply. Your settings do not take effect until the next time you sign onto this account.
5. Click Sign Out Now to sign off this account.
6. Sign onto your account to see the different size setting take effect.

FIGURE 16.3

Adjust the desktop font


Display
Control Panel ▸ Appearance and Personalization ▸ Display
Search Control Panel
Control Panel Home
Adjust resolution
Adjust brightness
Calibrate color
Change display settings
Project to a second screen
Adjust ClearType text
Set custom text size
See also
Personalization
Devices and Printers
Preview
Apply
Display
1:06 PM
4/2/2012

Make it easier to read what's on the desktop

You can change the size of text and other items on the desktop by choosing one of these options. To temporarily enlarge just part of the screen, use the Magnifier tool.

○ Smaller - 100% (default)

● Medium - 125%

⚠ This change will take effect the next time you sign in.

Some items may not fit on your screen if you choose this setting while your display is set to this resolution.

That should make the text large enough to read.

I don't have any desktop icons (or don't like their size)

If you don't have any desktop icons, they're probably turned off. Right-click the desktop and choose View ➪ Show Desktop Icons. To change their size, right-click the desktop and choose View. Then, click one of the icon sizes to the right (Large Icons, Medium Icons, Small Icons). If your mouse has a wheel, hold down the Ctrl key while spinning the wheel for other sizes.

I can't put my desktop icons where I want them

If you drag an icon to a new location on the desktop and it moves right back to where it was, right-click the desktop and choose View ➪ Auto Arrange Icons to turn off that feature.

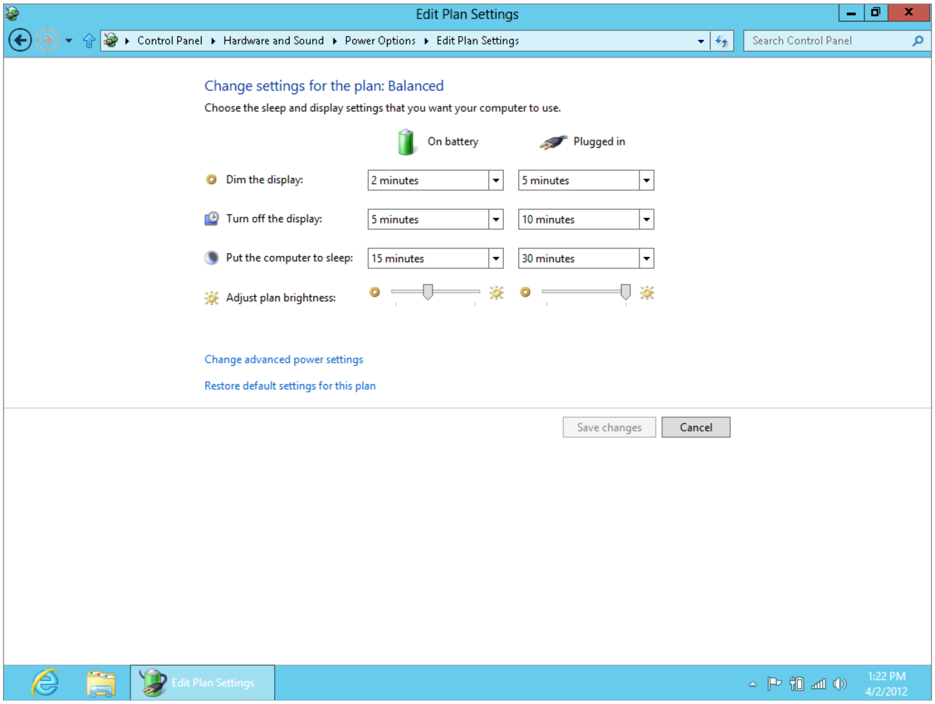
To sort desktop icons, right-click the desktop, choose Sort By, and try different options on the submenu to see different sort orders. You can sort by Name, Size, Item Type, or Date Modified.

My screen saver never kicks in

If your monitor is set to power down before your screen saver starts, you'll never see the screen saver. You either have to make your screen saver start sooner or make your monitor turn off later. To make the monitor turn off later, press Windows + X and click Power Options. The Edit Plan Settings displays, as shown in Figure 16.4. In the left column, click Turn Off The Display and set a time limit that's longer than the screen saver delay. Similarly, if the computer goes to sleep before the screen saver kicks in, you'll never see the screen saver.

FIGURE 16.4

Adjust power options


Edit Plan Settings
Control Panel ▸ Hardware and Sound ▸ Power Options ▸ Edit Plan Settings
Search Control Panel
Save changes
Cancel
Edit Plan Settings
1:22 PM
4/2/2012

Change settings for the plan: Balanced

Choose the sleep and display settings that you want your computer to use.

	On battery	Plugged in
Dim the display:	2 minutes	5 minutes
Turn off the display:	5 minutes	10 minutes
Put the computer to sleep:	15 minutes	30 minutes
Adjust plan brightness:		

Change advanced power settings

Restore default settings for this plan

See Chapter 47 for more information on power options.

Taskbar Problems

The taskbar is located on the Windows desktop and provides quick access to all your open applications, assuming that it's working correctly. The taskbar includes quick access to applications that have shortcuts created in this area. You can pin applications, web pages, or documents to the taskbar to provide one-click access to those items. Here are some tips for managing your taskbar problems.

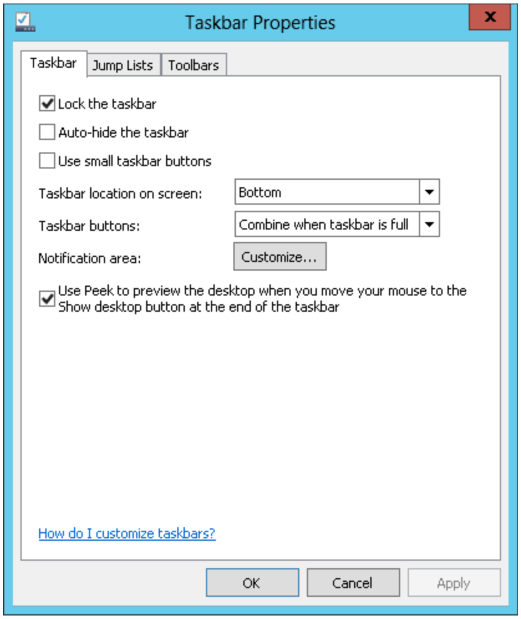
My taskbar is missing

If your taskbar is missing, it's probably just hidden. Touch the mouse pointer to the very bottom of the screen and it should scroll up into view. To make it stop going into hiding, follow these steps:

1. Right-click the taskbar and choose Properties.
2. Click the Taskbar tab and deselect the Auto-Hide The Taskbar check box. Figure 16.5 shows the Taskbar Properties dialog box.
3. Click OK.

FIGURE 16.5

Display the taskbar



☑ Lock the taskbar

☐ Auto-hide the taskbar

☐ Use small taskbar buttons

Taskbar location on screen: Bottom

Taskbar buttons: Combine when taskbar is full

Notification area: Customize...

☑ Use Peek to preview the desktop when you move your mouse to the Show desktop button at the end of the taskbar

I can't resize my taskbar

In previous versions of Windows, including Windows 7, Windows Vista, and Windows XP, you could resize the taskbar. With Windows 8, you do not have that option.

See Chapter 12 for more information on what you can customize on the taskbar.

I don't have a Quick Launch toolbar

If you are upgrading from Windows Vista and don't see the Quick Launch toolbar in Windows 8, don't be surprised. It's no longer included on the taskbar. It was actually removed during the upgrade from Windows Vista to Windows 7. The features of the Windows 8 taskbar essentially make the Quick Launch toolbar unnecessary.

Updating Your Display Driver

Problems that prevent you from setting a reasonable desktop size and color depth are often caused by the device driver for the video card. Similarly, if a video card meets all the requirements for Aero Glass, and you still can't get Aero Glass to work, you might need to update your display driver. To do so, follow these steps:

1. If you're in a standard user account, log in to an account that has administrative privileges.
2. Connect to the Internet so that Windows can look for a new driver online.
3. Open Device Manager (press Windows+X and click Device Manager).
4. Click the arrow (if any) next to Display Adapters.
5. Right-click the icon that represents your video card and choose Update Driver Software. Figure 16.6 shows an example.

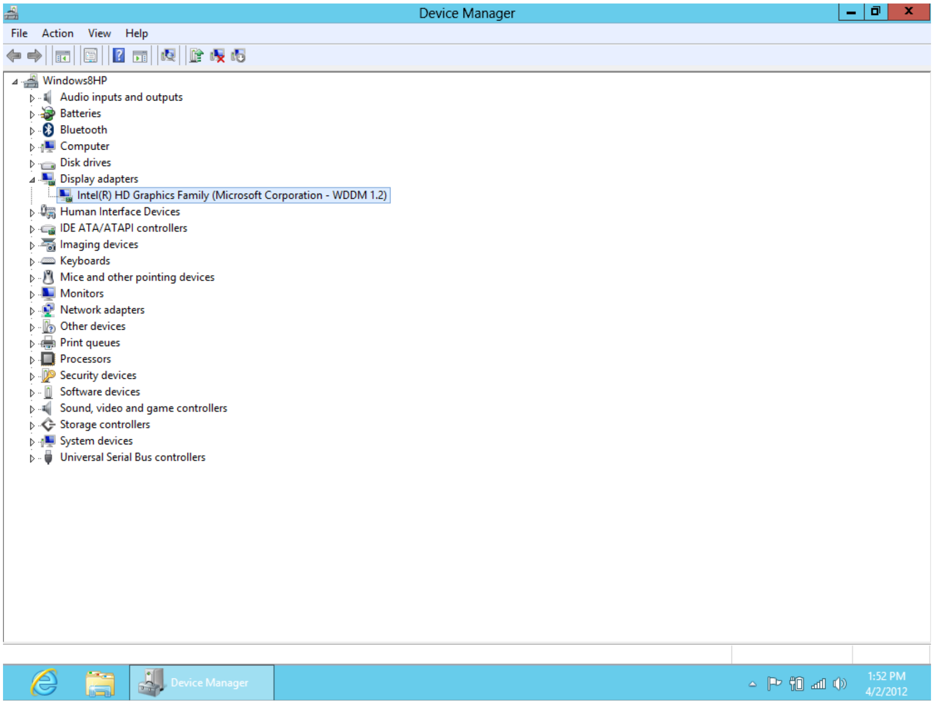
NOTE

The device name that shows under Display Adapters will likely be different on your computer. Also, only one name will likely be listed.

6. Follow the onscreen instructions.

FIGURE 16.6

Updating the device driver for a video card


Device Manager
File
Action
View
Help
Windows8HP
Audio inputs and outputs
Batteries
Bluetooth
Computer
Disk drives
Display adapters
Intel(R) HD Graphics Family (Microsoft Corporation - WDDM 1.2)
Human Interface Devices
IDE ATA/ATAPI controllers
Imaging devices
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Other devices
Print queues
Processors
Security devices
Software devices
Sound, video and game controllers
Storage controllers
System devices
Universal Serial Bus controllers
Device Manager
1:52 PM
4/2/2012

If the search doesn't find an updated driver, you might already have the latest driver for your video card. The only way to know for sure is to visit the card manufacturer's website and look up the latest driver for your specific video card.

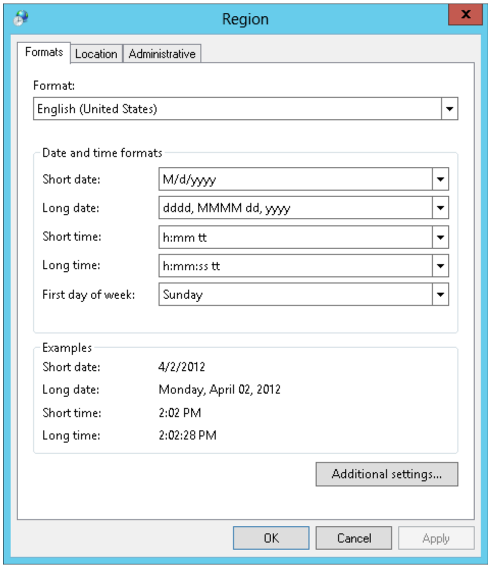
Regional and Language Settings

Different regions and languages show numbers, dollar amounts, dates, and times in different ways. For example, in the United States, dollar amounts are shown in $1,234.56 format. The United Kingdom uses a £1,234.56 format. French Canada would show that as 1 234,56 $. If your computer isn't showing numbers, dollar amounts, times, or dates correctly for your region, you can fix that. First, you need to open the Region dialog box. Press Windows+X; click Control Panel ➪ Clock, Language, And Region ➪ Region.

The dialog box opens, looking something like Figure 16.7. Click the Formats tab (shown in the figure) to change your regional settings.

FIGURE 16.7

Formats tab of the Region dialog box



Format: English (United States)

Date and time formats

Short date: M/d/yyyy
Long date: dddd, MMMM dd, yyyy
Short time: h:mm tt
Long time: h:mm:ss tt
First day of week: Sunday

Examples

Short date: 4/2/2012
Long date: Monday, April 02, 2012
Short time: 2:02 PM
Long time: 2:02:28 PM

Change how numbers, dates, and times look

The Formats tab of Regional and Language Options shows how numbers, currency values, dates, and times are displayed on your screen. You're not stuck with those formats, however. To change them, follow these steps:

1. Click the drop-down button under the Format heading and choose whichever option best describes your region. The formats beneath your selection will change to reflect how things are shown in that region.
2. If you need to change one or more of the formats shown under your selected language, click Additional Settings. In the dialog box that opens, specify exactly how you want Windows 8 to show Number, Currency, Time, and Date formats on your screen.
3. When you're happy with the examples shown in your Formats tab, click Apply and then OK.

You might want to take a look at the next section before you close the dialog box.

Modifying Location and Multiple Language Options

Some programs and online services tailor their content to match the location in which your computer is located. If that information seems incorrect, click the Location tab in the Region dialog box. Choose your actual location from the drop-down button and then click Apply and then OK.

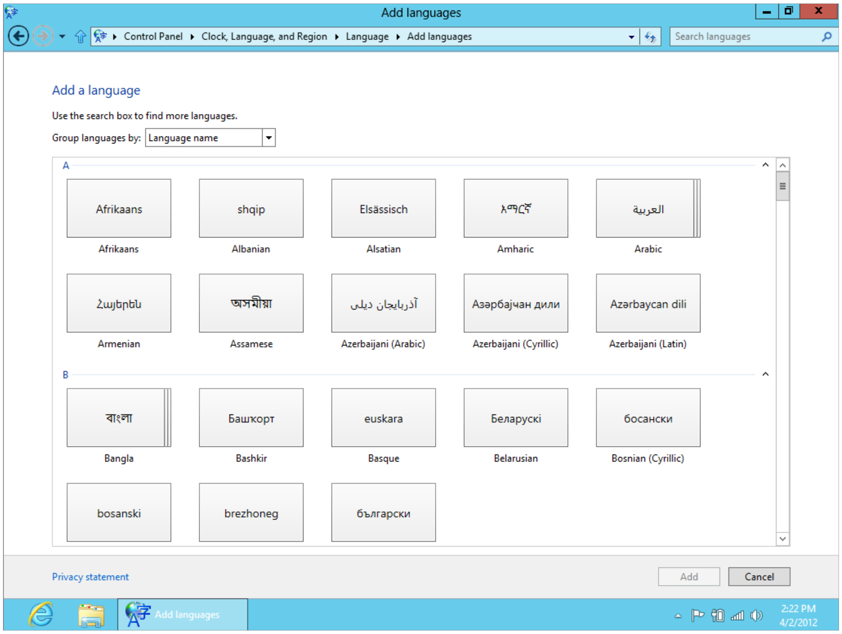
For people who work in multiple languages, Windows 8 offers some handy options for adjusting your keyboard to work in a specific language. These features are especially useful for translators who need to switch from one language to another.

To add a language, use the following steps:

1. Press Windows+X; click Control Panel; click Clock, Language, And Region; and click Language.
2. Click Add A Language. The Add A Language screen appears. (See Figure 16.8 for an example.)
3. Scroll through the list of languages and click the language you want to add.
4. Click Add. If the language you choose has multiple variations, such as Arabic, you need to click Open instead of Add, select the specific dialect for that language, and click Add. You return to the Change Your Language Preference screen.
5. To switch your primary language, select that language and click the Move Up button until that language appears at the top of the languages list.

FIGURE 16.8

Add a language



Add a language

Use the search box to find more languages.

Group languages by: Language name

Add languages
Control Panel
Clock, Language, and Region
Language
Add languages
Search languages
A
Afrikaans
Afrikaans
shqip
Albanian
Elsässisch
Alsatian
አማርኛ
Amharic
العربية
Arabic
Հայերեն
Armenian
অসমীয়া
Assamese
آذربایجان دیلی
Azerbaijani (Arabic)
Азәрбајҹан дили
Azerbaijani (Cyrillic)
Azərbaycan dili
Azerbaijani (Latin)
B
বাংলা
Bangla
Башҡорт
Bashkir
euskara
Basque
Беларускі
Belarusian
босански
Bosnian (Cyrillic)
bosanski
brezhoneg
български
Privacy statement
Add
Cancel
Add languages
2:22 PM
4/2/2012

You can install as many languages and keyboards as you wish. You don't have to do them all in one fell swoop, either. You can add them on an as-needed basis.

TIP

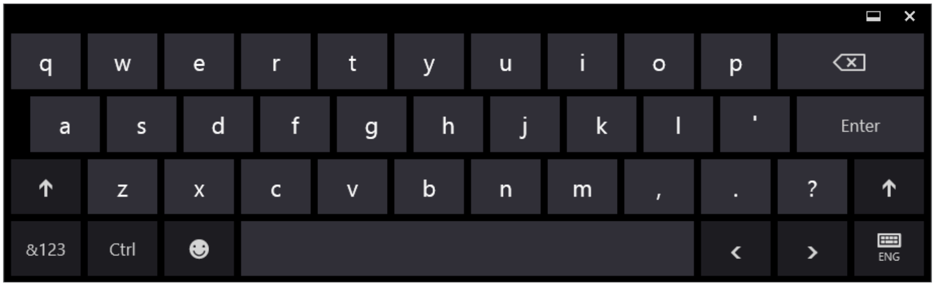
You don't need anything described in this chapter to type special characters. Those you can insert with Windows Character Map.

Switching languages and keyboards

When you have two or more input languages installed, only one is active at any given time. You need to be in a program that can use alternative languages, such as WordPad, Word, or the onscreen Touch Keyboard, for the active language list to be relevant at all. When that program is in the active window, you see which language is currently in use for that program. Figure 16.9 shows how the language list looks in Windows 8's Touch Keyboard. The three-letter abbreviation (in this example ENG) shows on the bottom-right row of the keyboard. A similar language list shows on the taskbar next to the clock. To change the language, click one of those items and choose a new language.

FIGURE 16.9

Language list appearing on the Windows 8 Touch Keyboard

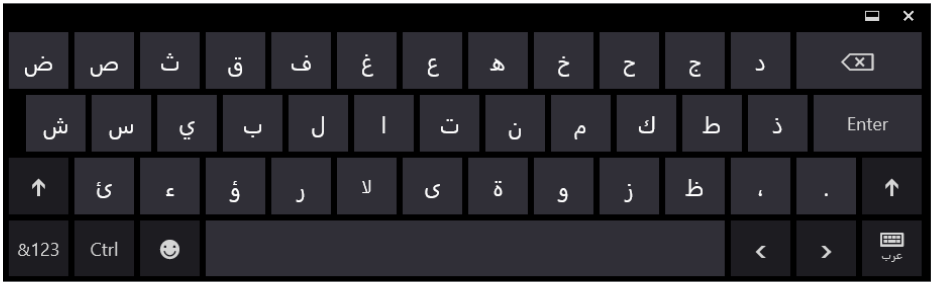


When you choose a different language and keyboard from the language list, the symbols on your keyboard's keys don't change to show the keyboard you've selected. (They do on the onscreen Touch Keyboard, however.) Ideally, you would want to plug in a keyboard that already has the keys in the right layout, or at least use some kind of template that shows how keys are laid out. In a pinch, you can use the Touch Keyboard or an onscreen layout to see the keyboard layout. You can find small layouts for the screen by browsing to `www.microsoft.com` with Internet Explorer and searching for "windows keyboard layouts."

Figure 16.10 shows an example in which I selected the Touch Keyboard and then chose Arabic (Syria) as the keyboard. The keyboard characters look nothing like the standard English keyboard except for a few keys (Enter, Ctrl, and the numbers key).

FIGURE 16.10

Onscreen Arabic keyboard



Removing input languages

Removing an input language follows much the same process as adding one. Get back to the Languages window. Click the language or keyboard you want to remove and then click the Remove button.

Wrap-Up

Sometimes as you customize Windows 8, you may find that a setting is not what you wanted or expected. In this chapter, you learned how to set Windows desktop settings, adjust display items, and change taskbar settings. Regional and Language input languages enable you to choose languages and keyboards for reading and editing text.

Part IV

Beyond the Desktop

IN THIS PART

Chapter 17
Chatting with Windows 8

Chapter 18
Windows 8 and Windows Live

Chapter 19
Social Networking with Windows 8

Chapter 20
Using Computers Remotely

Chapter 21
Managing Names and Addresses

Chapter 22
Working in the Cloud

CHAPTER 17

Chatting with Windows 8

IN THIS CHAPTER

- Using the Messaging app
- Installing Windows Live Messenger
- Chatting online

In the earliest days of personal computing, people communicated with others mostly by e-mail. Today, people have many different ways to communicate online in addition to e-mail. Online chat is one of those ways. With a chat program, people can communicate in real time by sending text messages back and forth to one another. All it takes is a chat program and an account with an online chat provider.

Windows 8 includes an app called Messaging that you can use to send and receive instant messages to different messaging systems, including Windows Messenger and Facebook. Like most Windows 8 apps, Messaging is a fairly simple, easy-to-use app. As such, it doesn't have the same level of features as some other messaging apps. So this chapter also covers Windows Live Messenger, a messaging app you can use in place of, or in addition to, Messaging.

Windows Live Messenger is an add-on program from Microsoft and part of the Windows Live Essentials family of applications, which you can add to your computer and use to communicate with others online in a variety of ways. For example, you can chat online, send text messages, share photos, and even hold a video or audio conference. This chapter offers a brief overview of Windows Live Messenger to get you started. We start with a quick overview of the technology and then explain how you can download and install Windows Live Messenger on your computer. Then, we show you how to use Messenger to chat, text, and share photos. Although this chapter doesn't offer a complete look at all of Messenger's features, you'll find enough information here to help you understand what Messenger can do, as well as where to go for more information.

TIP

For detailed coverage of Messenger, see *Windows Live Essentials and Services* by Bradley Jones and Marcus Schmidt (Wiley, 2009).

Understanding Chat and IM

Online chat, also called *instant messaging* (IM for short), is a very simple concept. You open a chat program, choose a person you want to communicate with, and then type a text message. That message goes across the Internet to a chat server and from there to the other person's computer, where it appears on his screen in his chat program. Then, he types a response and sends it back to you to respond to if you choose. A chat conversation could comprise a few messages or it could go on for hours, the same as any conversation.

NOTE

The terms *chat* and *IM* are used synonymously in this chapter.

Why IM? Not everyone sees its usefulness. Not everyone types fast and you can spend time waiting on a response, which can be frustrating. In addition, many users find that when they are in a chat they ignore other tasks. You might be the kind of person who finds it easier to pick up the phone to resolve a work issue. However, online chat can be great for people who already spend a lot of time in phone conferences. If you spend several hours a day on the phone, you might not get much other work done.

Throw e-mail and chat into the mix, however, and you can get a lot done. So, when you're on a call, you can also be writing and receiving e-mail, chatting online with others, and, occasionally, talking on yet another phone call. In fact, quite often today people are chatting with other people who are on the same conference call while someone else is speaking. This behind-the-scenes communication is particularly useful when customers are on the call and you need to share some internal-only information.

Following are the benefits that IM brings to a typical work environment:

- **Easy access to others:** A chat conversation is just a couple of clicks away, and you can tell from the chat program (in this case, Messenger) that the other person is online. This is called "presence."
- **Quick conversations:** If you just have a quick question, you can ask it in a chat session and get a response back usually fairly quickly.
- **Multitasking:** Usually, a one-on-one phone call consumes the majority of your attention. With a chat session, you can send a message and then focus on other tasks while you wait for a response.
- **Instant notes:** Many people routinely use IM to send or receive information. They can copy that information right from the IM program and use it in other programs. The phrase "IM that to me" is pretty common these days.

IM is much the same for a home user, except that the conversations are generally personal in nature, just as you might have over the phone. The difference is that, unlike with a phone, you might be carrying on several IM conversations at the same time.

Programs such as Messaging and Windows Live Messenger enable you to communicate with people in real time, whether they are in the next room or on the other side of the planet. In general, IM is free, other than the cost of having your Internet connection. To use IM, you need only an IM program (such as Messenger) and an online account, both of which are generally free.

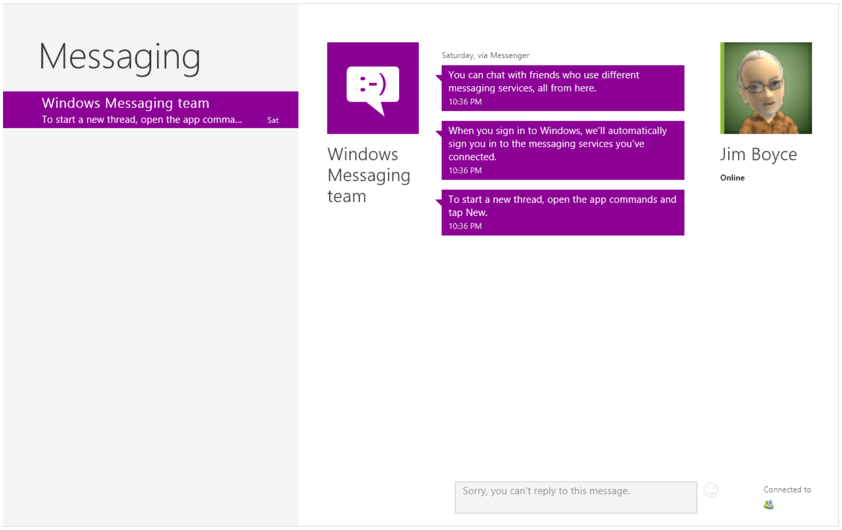
In this chapter, we assume that you have a Windows Live account (which includes Hotmail accounts) or a Facebook account. You need one of those to use Messaging or Messenger. Also, you need a microphone if you want to take advantage of Messenger's voice chat capabilities and a webcam (a camera either built in to your computer or attachable to it) to do video chat.

Using the Messaging App for IM

Windows 8 includes a simple app for IM called Messaging. Figure 17.1 shows the Messaging app with a small number of sample messages.

FIGURE 17.1

The Windows 8 Messaging app



To start a new thread, open the app comma...

You can chat with friends who use different messaging services, all from here.
10:36 PM

When you sign in to Windows, we'll automatically sign you in to the messaging services you've connected.
10:36 PM

To start a new thread, open the app commands and tap New.
10:36 PM

Sorry, you can't reply to this message.

If you logged into Windows with your Windows account (formerly Windows Live), Messaging will already be configured to use the app with your Messenger. If not, you can click Add More to add the account. Or you can click the Facebook link near the bottom right corner of the app to add your Facebook account, enabling you to IM with your Facebook friends.

NOTE
At the initial release of Windows 8, Messenger and Facebook are the only services supported by the Messaging app. However, other services will no doubt be supported in the future. So when you open Messaging, you might see account options in addition to Facebook.

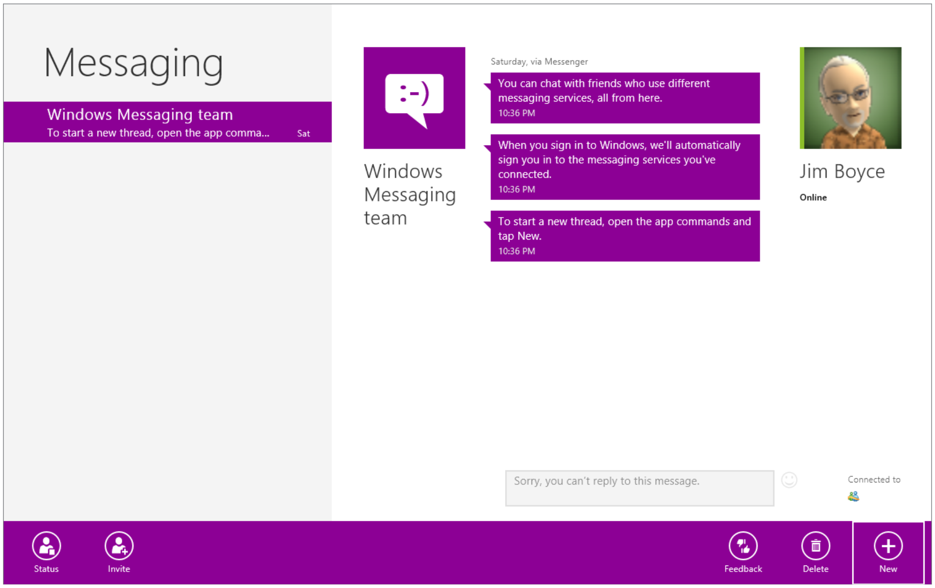
Sending and receiving messages with Messaging

The Windows 8 Messaging app works in conjunction with the People app, enabling you to send and receive messages with the contacts in People. Because both the People app and Messaging app support different types of accounts, the key to successful access to contacts in Messaging is to make sure you've connected in People all of the services containing contacts with whom you want to chat. For example, if you want to chat with your Facebook friends using Messaging, make sure to add the Facebook service to People. You'll then be able to select them when starting a chat session.

To send an IM to a contact using Messaging, first open the Messaging app and right-click in the app or slide up from the bottom to open the App bar. Then, click New, as shown in Figure 17.2.

FIGURE 17.2

The Messaging App bar


Messaging
Windows Messaging team
To start a new thread, open the app comma... Sat
Windows Messaging team
Jim Boyce
Online
Connected to
Status
Invite
Feedback
Delete
New

Saturday, via Messenger

You can chat with friends who use different messaging services, all from here.
10:36 PM

When you sign in to Windows, we'll automatically sign you in to the messaging services you've connected.
10:36 PM

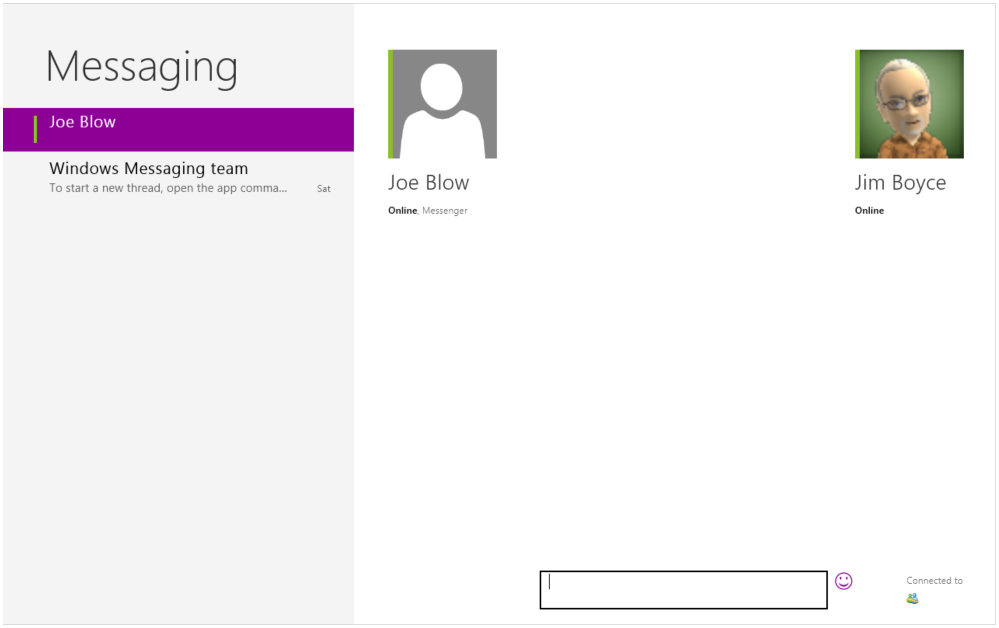
To start a new thread, open the app commands and tap New.
10:36 PM

Sorry, you can't reply to this message.

Clicking or tapping New opens the People app and shows the first page of your contacts. By default, People shows all contacts, but you can click Online Only to show only those contacts who are currently online. When you find the contact with whom you want to chat, just click or tap the contact to select it, and then click or tap Select. Messaging then shows the contact in the left pane, as shown in Figure 17.3.

FIGURE 17.3

A contact in Messaging



Messaging

Joe Blow

Windows Messaging team
To start a new thread, open the app comma... Sat

Joe Blow
Online, Messenger

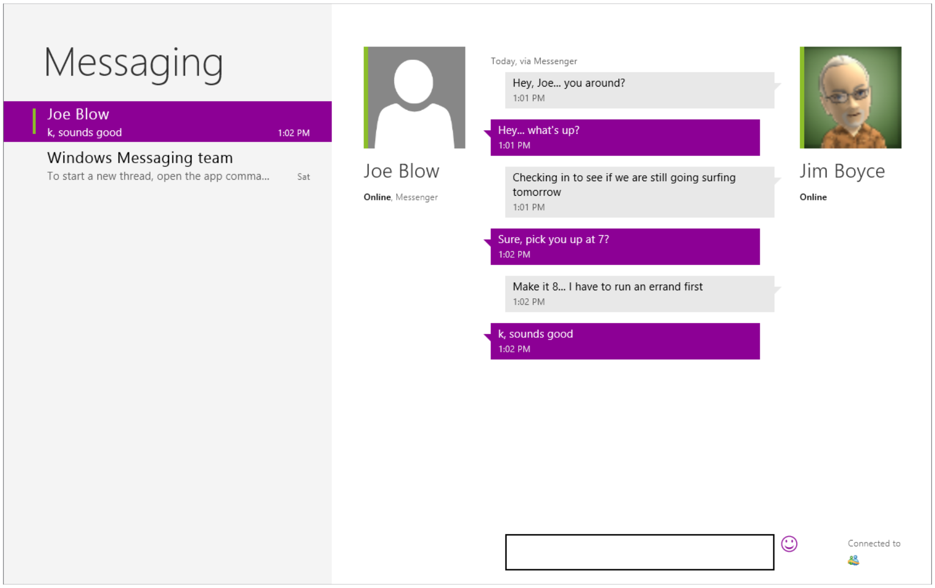
Jim Boyce
Online

Connected to

With the contact selected, just type your message and press Enter. Messaging sends the message to the contact. Replies show up in the same window. Figure 17.4 shows a sample message thread.

FIGURE 17.4

A short message thread in Messaging



k, sounds good

To start a new thread, open the app comma...

Today, via Messenger

Hey, Joe... you around?
1:01 PM

Hey... what's up?
1:01 PM

Checking in to see if we are still going surfing tomorrow
1:01 PM

Sure, pick you up at 7?
1:02 PM

Make it 8... I have to run an errand first
1:02 PM

k, sounds good
1:02 PM

Although Messaging doesn't support multiple contacts in a single conversation thread, you can have multiple threads at once. Just right-click or slide up to open the App bar, and then click or tap New and add another contact. The current message threads are listed in the left pane of the Messaging app, and you can switch between them simply by clicking or tapping the contact in the list.

TIP

Messaging shows a preview of the first line of the last reply under the contact's name in the left pane. This helps you track each conversation without switching back and forth except when you want to send your own reply.

Deleting a message thread

Messaging keeps track of your message threads. So the next time you open Messaging, the conversation thread for a given contact will be shown in the app when you select that contact. Whether for privacy or to unclutter the app, you can delete a message thread. To do so, click or tap the contact to show the thread. Then, right-click or slide up to open the App bar. In the App bar, click or tap Delete. In the pop-up, click or tap Delete Thread. The message thread should disappear from the app.

NOTE
Deleting a thread doesn't delete a contact. It only deletes the message thread from the Messaging app.

Setting your status

Generally, when you're online and available for chat, you'll want your status to show as Online, letting others know that you are available to chat. Sometimes, however, you might want to remain online but not show as available for chat. For example, maybe you're working on finishing an important project and don't want to be disturbed.

To change your status, right-click in the app or slide up to open the App bar. Click or tap Status, and then choose either Online or Invisible.

Inviting contacts

Although you will most likely manage your contacts in the People app or in the web interface for you other services (such as Facebook), you might prefer to manage them from the Messaging app. While Messaging doesn't let you manage the contacts directly, it makes it easy to access your Windows account, where you can add and remove contacts. To do so, right-click in the app or slide up to open the App bar. Then, click or tap Invite and choose Add A Friend. The Messaging app launches Internet Explorer and opens the Windows Live site. From the site, you can add contacts from Windows Live or from any of the other services supported by Windows Live, such as Facebook, LinkedIn, and others.

Setting Messaging options

Like many Windows 8 apps, Messaging doesn't offer a broad range of options for you to configure, but you can set a handful of options. With the Messaging app open, open the Charms Bar and click or tap Settings. Messaging offers three sets of options that you can configure:

- **Accounts:** Use this to add an account for another service so you can send and receive messages to contacts on that service.
- **Options:** Here you can turn Messaging on or off, which enables you to view existing message threads in Messaging but takes you offline so others can't send you messages.
- **Permissions:** Here you can turn on or off your webcam and microphone, making them available for voice and video chat. Use the Notifications option to specify whether Messaging will show notifications when you receive a message and the app is not running in the foreground. Use the Lock Screen option to specify whether Messaging will run in the background and show its status on the Lock screen. For example, if this option is on and you receive an IM when your computer is locked, you'll see the message appear briefly on the Lock screen. After a short period, the message will disappear and a small icon under the date will indicate the number of messages received.

Using Windows Live Messenger

As mentioned in the introduction to this chapter, you can use Windows Live Messenger in addition to or in place of the Messaging app. The following sections of the chapter explain how to download, install, and use some of the basic features of Windows Live Messenger.

Adding Messenger to Windows

As mentioned earlier, Windows Live Messenger is not included with Windows 8. Instead, it is available as a download from the Microsoft Live website. Before you download it, first check to see whether it is already on your computer. The easiest way to see if the app is already on your device is to open the Start screen and then type **Windows Live** to start a search. If Messenger is installed, you'll see it listed in the search results and you can then pin it to the Start screen (if not already there), pin it to the taskbar, or just start it. If Messenger doesn't show up, you need to add it. Doing so is easy:

1. Open your web browser and navigate to `http://windows.microsoft.com/en-US/windows-live/essentials-home`.
2. If you don't have a Windows Live account, sign up for one at the Windows Live login page. If you already have one, sign in with it.
3. When the Windows Live home page appears, click Download Now.
4. Click Run when prompted to either run or save the file.

NOTE

Note that Windows Live Messenger isn't a Windows 8 app and therefore runs on the desktop. If you like the Messaging app but primarily work from the desktop, Messenger is a great alternative for when you need to work from the desktop but still want to IM or voice/video chat.

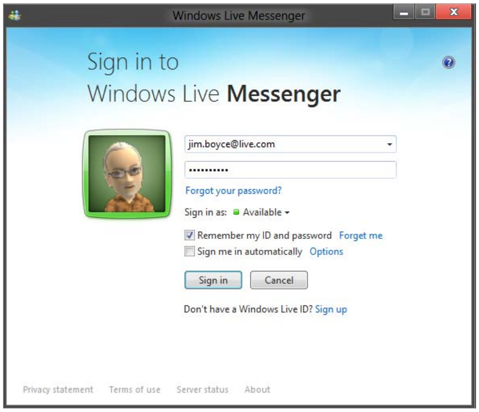
At this point, completing the installation is a simple matter of specifying which Windows Live programs you want to install. Make sure to select the box next to Windows Live Messenger and then follow the remaining instructions to complete the installation. Setup will download the programs you specify; depending on the speed of your Internet connection, downloading and installing the programs you choose can take several minutes.

Setting up your account

Setting up an account in Messenger is even easier than installing the program. Start by opening Windows Live Messenger. Figure 17.5 shows the Messenger window.

FIGURE 17.5

Windows Live Messenger



Sign in to
Windows Live **Messenger**

jim.boyce@live.com

••••••••••

Sign in as: Available

☑ Remember my ID and password

☐ Sign me in automatically

17

To set up your account, simply type your Hotmail or Windows Live e-mail address in the account text box and type the password for that account in the password text box. You can use the following options to control sign-in:

- **Remember My ID And Password:** Messenger will remember your e-mail address and password so that you don't have to type them each time you sign in.
- **Sign Me In Automatically:** If you directed Messenger to remember your account and your password, you can use this option to have Messenger sign you in automatically when the program opens.

After you specify your sign-in options, click Sign In.

NOTE

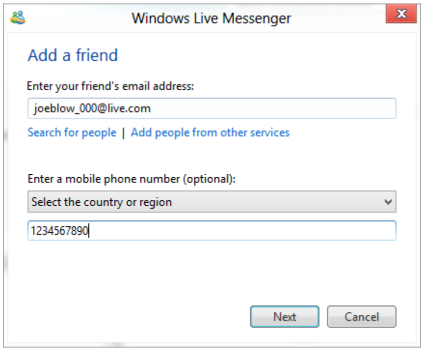
When Messenger first starts up, you can choose between starting it with a Social Highlights window that shows status about your contacts, or the MSN window, which provides news and other information.

Adding contacts

Before you can communicate with someone using Messenger, you need to add that person as a contact. To add a new contact, click Add and choose Add A Friend. Messenger displays the dialog box shown in Figure 17.6, where you can enter an e-mail address, mobile device number, or both. Click Next when you're finished. Then, specify if you want to add the person to your favorites, and click Next. After the friend is added, you can click Add More Friends to add another contact, or click Close.

FIGURE 17.6

Add a friend



Windows Live Messenger

Add a friend

Enter your friend's email address:

joeblow_000@live.com

Enter a mobile phone number (optional):

Select the country or region

1234567890

Search for people | Add people from other services
Next
Cancel

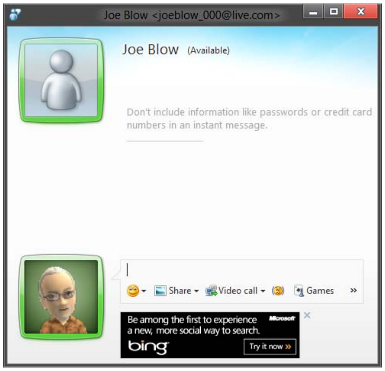
Windows Live Messenger also gives you a means to add contacts from other services such as Facebook, MySpace, LinkedIn, hi5, and Tagged. To add these contacts, click Add and choose Add People From Other Services. Messengers opens a web browser at the Windows Live site, and on the resulting web page, you can select the service provider you want to use (such as Facebook). Make your selection and click the Next button. You are redirected to the service provider's website, where you can sign in and select users to add. Follow the prompts at the site to complete the process.

Chatting online

After you have added some contacts, you can start chatting with them in Messenger. To start a conversation with a contact, just double-click the contact's name. Messenger opens a window similar to the one shown in Figure 17.7. Type your message and press Enter. If you want to add a smiley (such as a happy face) or a wink, select it from one of the buttons on the toolbar under the chat text box. You can also click the Nudge button to nudge everyone in the conversation (which shakes the Messenger window on their desktops).

FIGURE 17.7

A new chat window



Joe Blow <joeblow_000@live.com>

Joe Blow (Available)

Don't include information like passwords or credit card numbers in an instant message.

Share
Video call
Games
Be among the first to experience a new, more social way to search.
Microsoft
bing
Try it now »

Changing the font

Messenger uses a default font, but you can change the font if you prefer a different one. Everything you type then shows up in that font in the text box as you type. Your text shows up on the other contacts' chat windows with the new font as well.

To change the font, click the Show More Commands button below the text box in the chat window. Then, choose Change Font. Messenger displays a Change Font dialog box in which you can choose a font, style size, color, and other font properties. Click OK when you're done and then start typing to use the new font.

Audio, video, and more

We've touched on only the very basics of Windows Live Messenger in this chapter. Messenger offers a lot of other features that we don't cover. For example, if you and the other participants have the appropriate recording and playback hardware (typically a microphone and speakers) you can hold an audio conversation. This is a great way to save on long-distance phone charges, particularly if the other person is in another country. You can also hold a video chat, assuming that both you and the other person have webcams. If only one of you has a webcam, the other person can still view video from that webcam.

Messenger's features don't stop there. You can also play games online with your contacts, send files, send an e-mail message, and lots more. To learn more about these other features, spend some time experimenting with Windows Live Messenger and check out *Windows Live Essentials and Services* from Wiley.

Wrap-Up

The Messaging app included with Windows 8 offers a simple interface for instant messaging with your friends who have accounts on various services such as Windows Live and Facebook. While it doesn't offer the same level of features and many other chat programs, it nevertheless provides a way for you to chat with one or more of your friends at the same time.

As an alternative to Messaging, Windows Live Messenger, a free add-on for Windows computers, provides a great set of tools for communicating with others. These include instant messaging (IM), audio and video conferencing, and photo and file sharing. Following are key points covered in this chapter:

- Messaging is an instant messaging app included with Windows 8.
- You can engage in multiple IM sessions at one time with Messaging.

- Windows Live Messenger is a free add-on for Windows, available at `http://windows.microsoft.com/en-US/windows-live/essentials-home`.
- You can use Messenger to chat with others online.
- With a microphone and speakers, you can hold voice chat sessions with your online contacts across the Internet.
- With a webcam, you can hold a video chat session with your contacts.
- You can share files, share photos, and play online games using Messenger.

CHAPTER 18

Windows 8 and Windows Live

IN THIS CHAPTER

Understanding Windows Live

Uploading files to SkyDrive

Using Office web apps

Windows Live is a web-based portal you can use to communicate and collaborate with others using Office web apps and shared files in SkyDrive.

With a free account to Windows Live, you have access to free online versions of Microsoft Office programs, including Word, Excel, PowerPoint, and OneNote. You also have 7GB of free storage space using the SkyDrive service. This chapter shows you how to set up a Live account, use Office web apps, and upload files to SkyDrive.

Windows Live

Windows Live is an online, web-based portal (also known as the "cloud") for storing files that you want to access from the cloud. Windows Live is free and is hosted by Microsoft. The following are some of the Windows Live features available to users:

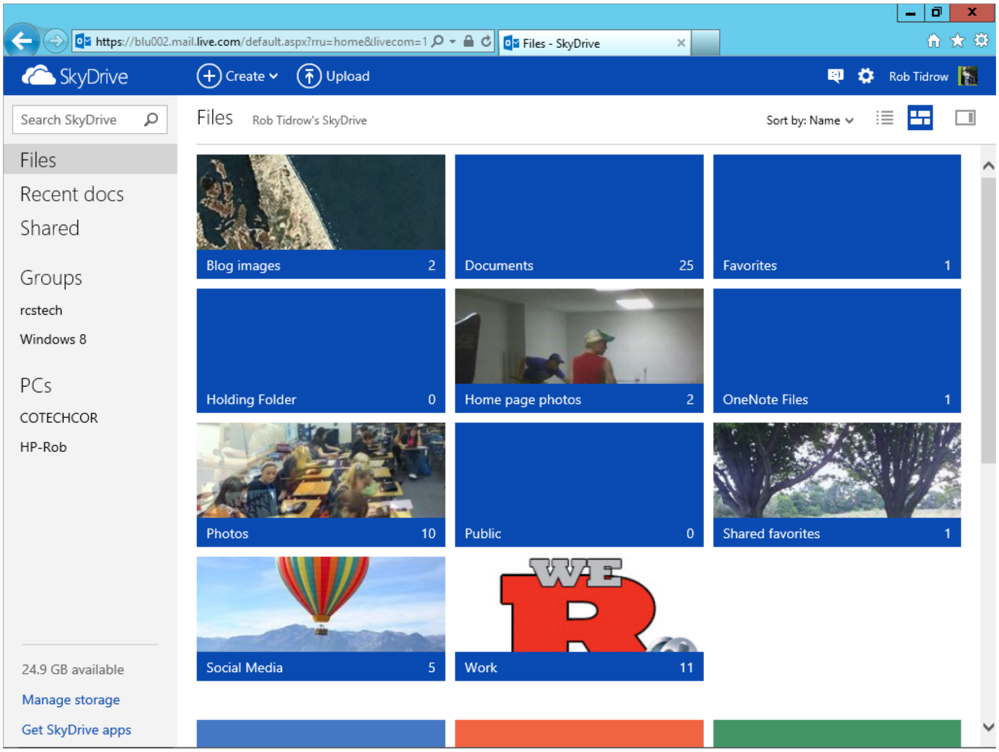
- **Outlook:** Free e-mail from Microsoft.
- **SkyDrive:** 7GB of free file storage. Chapter 22, "Working in the Cloud," discusses SkyDrive in more detail.
- **Office web apps:** Access to online versions of Microsoft Office applications, including Microsoft Word, Excel, PowerPoint, and OneNote.
- **Calendar:** For setting schedules, event reminders, and to-do lists. You can share your calendar with other users.
- **Contacts:** Where you can use Microsoft Messenger to chat with friends and manage your Hotmail contacts.

- **Photos:** Provides an online place for posting photos and videos. You also can create slideshows to share with others.

Figure 18.1 shows an example view of the Windows Live website.

FIGURE 18.1

The Windows Live online portal

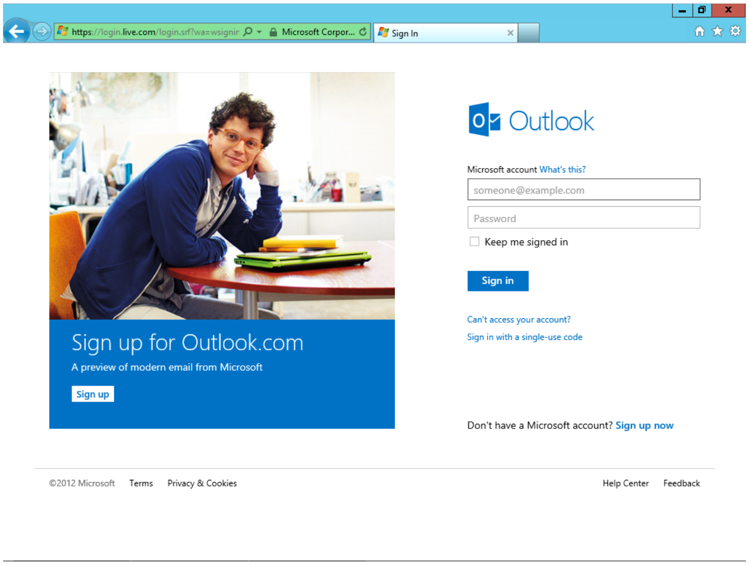

https://blu002.mail.live.com/default.aspx?rru=home&livecom=1
Files - SkyDrive
SkyDrive
Create
Upload
Rob Tidrow
Search SkyDrive
Files
Rob Tidrow's SkyDrive
Sort by: Name
Files
Recent docs
Shared
Groups
rcstech
Windows 8
PCs
COTECHCOR
HP-Rob
24.9 GB available
Manage storage
Get SkyDrive apps
Blog images 2
Documents 25
Favorites 1
Holding Folder 0
Home page photos 2
OneNote Files 1
Photos 10
Public 0
Shared favorites 1
Social Media 5
Work 11

Creating a Windows Live Account

To begin using Windows Live, you must create an Outlook.com e-mail account. Visit `http://outlook.com` to see the screen shown in Figure 18.2. Click the Sign Up Now link to access the Microsoft Account form, as shown in Figure 18.3 Fill out the following information to create your Outlook.com account, which provides access to Windows Live.

FIGURE 18.2

It's free to sign up for a Windows Live account.


https://login.live.com/login.srf?wa=wsignir
Microsoft Corpor...
Sign In
Outlook
someone@example.com
Password
Sign in
Sign up
Terms
Privacy & Cookies
Help Center
Feedback

Microsoft account What's this?

☐ Keep me signed in

Can't access your account?

Sign in with a single-use code

Sign up for Outlook.com

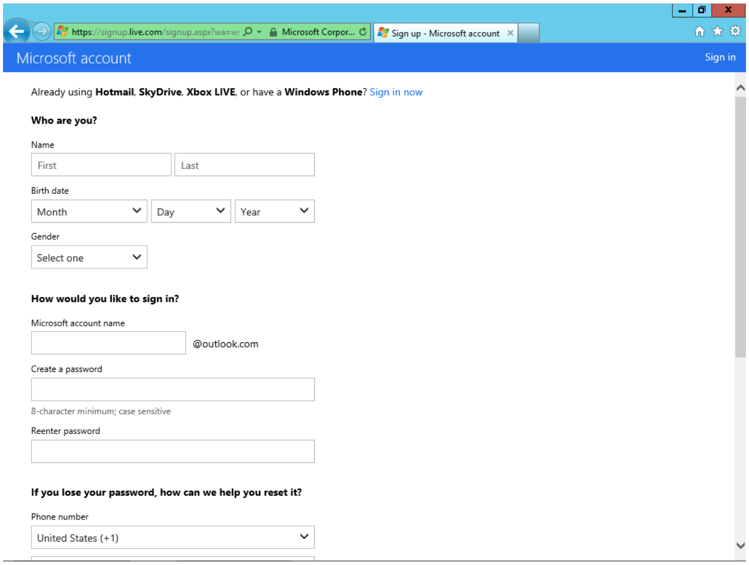
A preview of modern email from Microsoft

Don't have a Microsoft account? Sign up now

©2012 Microsoft

FIGURE 18.3

When you create an Outlook.com account, you can access Windows Live tools as well.


https://signup.live.com/signup.aspx?wa=w:
Microsoft Corpor...
Sign up - Microsoft account
Microsoft account
Sign in
First
Last
Month
Day
Year
Select one
@outlook.com
United States (+1)

Already using **Hotmail**, **SkyDrive**, **Xbox LIVE**, or have a **Windows Phone**? Sign in now

Who are you?

Name

Birth date

Gender

How would you like to sign in?

Microsoft account name

Create a password

8-character minimum; case sensitive

Reenter password

If you lose your password, how can we help you reset it?

Phone number

- **Name Fields:** Fill in your first and last names.
- **Birth date:** Specify your birthdate.
- **Gender:** Select Male, Female, or Not Specified.
- **Microsoft Account Name:** Enter a name that you want to use as your e-mail address. The domain name will be `@outlook.com`.
- **Password:** Create an eight-character password and enter it again in the Reenter Password field.
- **Phone Number:** Enter a phone number so Microsoft can send you a text message if you forget your password in the future.
- **Alternate Email Address:** In case you need to reset your password, fill in a second e-mail address you have. Or click the Or Choose A Security Question link to choose a security question to set up for any future password resets that are needed. You must provide at least two ways (phone number, alternate e-mail address, or security question) for Microsoft to confirm who you are in case you lose your password in the future.
- **Country/Region:** Select the country you reside in.
- **ZIP Code:** Fill in your ZIP code.

Once you finish, click I Accept. The Help Us Make Sure You're Not A Robot area appears. To continue, you must enter the characters shown on the screen to prove that you are not a robot.

The Outlook.com website appears. A message describing Outlook.com features displays. Click Continue To Inbox to see your new e-mail inbox.

Before you continue, you may want to know how to return to Windows Live or Outlook.com without setting up a new account. That is easy. The next time you visit Windows Live, you can go to `http://outlook.com` and then enter your Windows Live credentials.

Using Windows Live

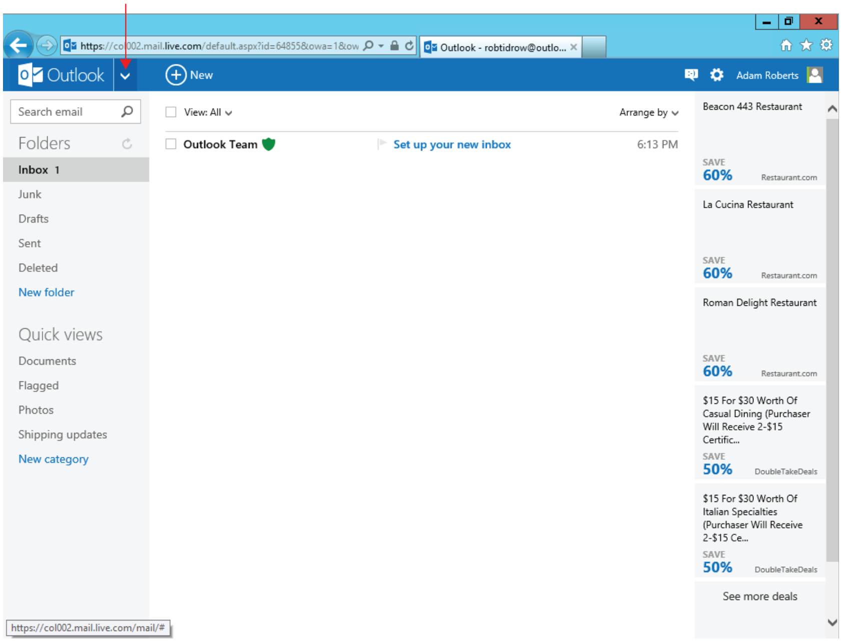
When you first connect to Windows Live by using Outlook.com, you may wonder what else besides e-mail is available. To see additional services of Windows

Live, use the Windows Live top menu. To access this menu, hover the mouse over the word Outlook on the top left of the screen. A down arrow appears, as shown in Figure 18.4.

FIGURE 18.4

Click the down arrow next to the Outlook label to see other Windows Live tools.

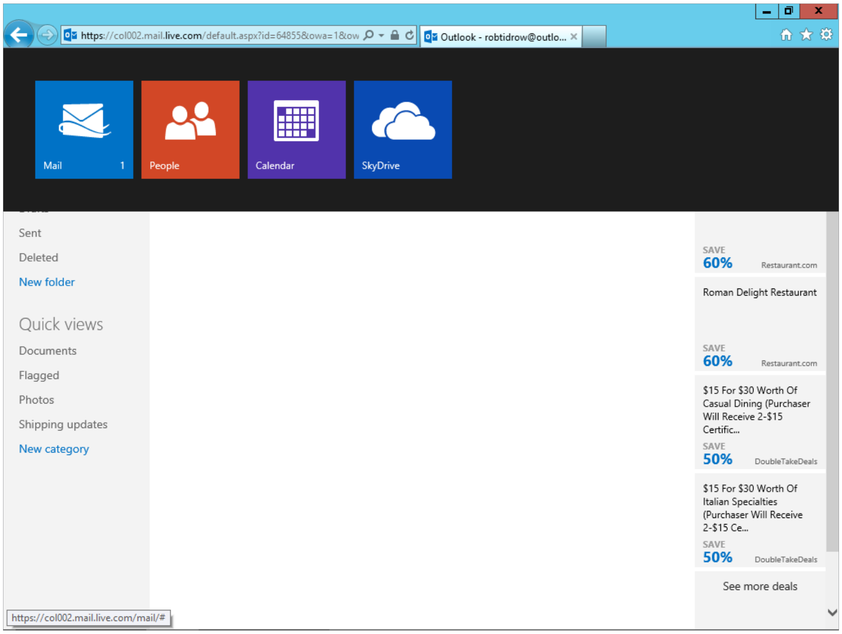
Click here to see other Windows Live tools


https://col002.mail.live.com/default.aspx?id=64855&owa=1&ow
Outlook - robtidrow@outlo...
Outlook
New
Adam Roberts
Search email
View: All
Arrange by
Folders
Inbox 1
Junk
Drafts
Sent
Deleted
New folder
Quick views
Documents
Flagged
Photos
Shipping updates
New category
Outlook Team
Set up your new inbox
6:13 PM
Beacon 443 Restaurant
SAVE 60% Restaurant.com
La Cucina Restaurant
SAVE 60% Restaurant.com
Roman Delight Restaurant
SAVE 60% Restaurant.com
$15 For $30 Worth Of Casual Dining (Purchaser Will Receive 2-$15 Certific...
SAVE 50% DoubleTakeDeals
$15 For $30 Worth Of Italian Specialties (Purchaser Will Receive 2-$15 Ce...
SAVE 50% DoubleTakeDeals
See more deals
https://col002.mail.live.com/mail/#

Click the down arrow to display the additional Windows Live tools (see Figure 18.5), which are described in the following list:

FIGURE 18.5

Windows Live includes more than just Outlook.com.


https://col002.mail.live.com/default.aspx?id=64855&owa=1&ow
Outlook - robtidrow@outlo...
Mail 1
People
Calendar
SkyDrive
Sent
Deleted
New folder
Quick views
Documents
Flagged
Photos
Shipping updates
New category
SAVE 60% Restaurant.com
Roman Delight Restaurant
SAVE 60% Restaurant.com
$15 For $30 Worth Of Casual Dining (Purchaser Will Receive 2-$15 Certific...
SAVE 50% DoubleTakeDeals
$15 For $30 Worth Of Italian Specialties (Purchaser Will Receive 2-$15 Ce...
SAVE 50% DoubleTakeDeals
See more deals
https://col002.mail.live.com/mail/#

- **Mail:** Provides access to the Outlook.com Inbox area.
- **People:** Provides access to the Windows Live People area. This area enables you to follow your social media accounts, including Facebook, Google contacts, LinkedIn, and Twitter.
- **Calendar:** Provides access to your Outlook.com calendar.
- **SkyDrive:** Provides access to Microsoft SkyDrive (cloud-based storage) and Microsoft Office web apps. SkyDrive is discussed in the "Saving Files in SkyDrive" section next. Also, see the "Using Office Web Apps" section on using Office web apps.

Saving Files in SkyDrive

SkyDrive is a cloud-based storage area available with your Windows Live account. You can upload files from your computer into the SkyDrive area on Windows Live to be accessible from other devices that have Internet access. For example, you can store files from your work computer on SkyDrive that you can access from home using your home computer, iPad, or smart phone.

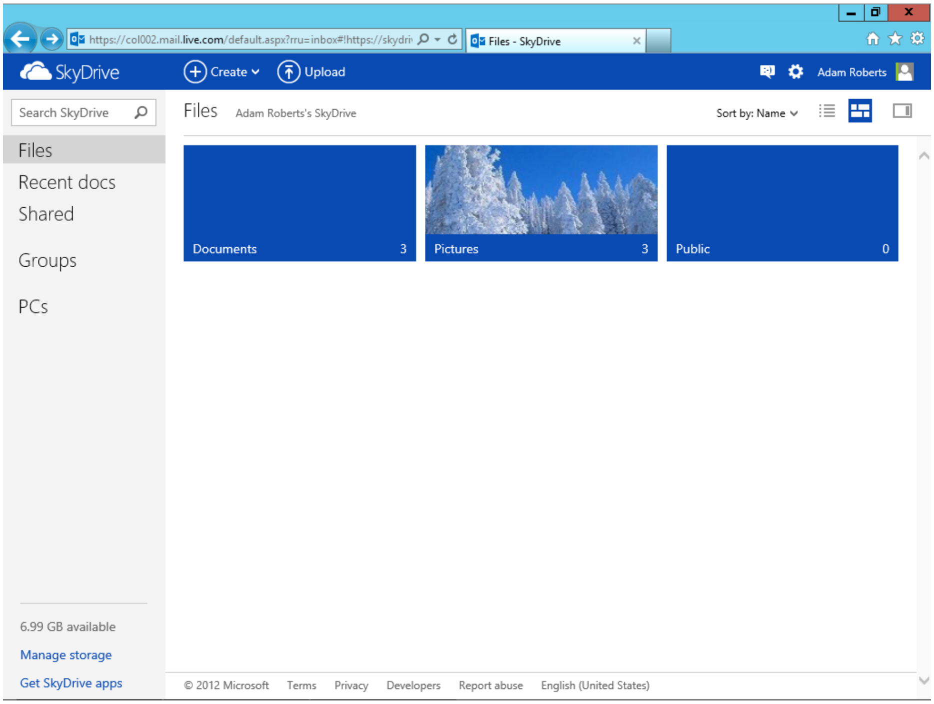
To upload a file to SkyDrive, click SkyDrive on the Windows Live top menu (see Figure 18.6).

NOTE

Read Chapter 22 for more information on using SkyDrive as a Windows 8 app and as a Windows 8 application.

FIGURE 18.6

SkyDrive provides an online area for you to store and back up files.


https://col002.mail.live.com/default.aspx?rru=inbox#!https://skydri
Files - SkyDrive
SkyDrive
Create
Upload
Adam Roberts
Search SkyDrive
Files
Adam Roberts's SkyDrive
Sort by: Name
Files
Recent docs
Shared
Groups
PCs
Documents 3
Pictures 3
Public 0
6.99 GB available
Manage storage
Get SkyDrive apps
© 2012 Microsoft
Terms
Privacy
Developers
Report abuse
English (United States)

Click the Upload link to display the Choose File To Upload dialog box. Select a file to upload to SkyDrive and click Open. SkyDrive uploads the file into your SkyDrive area.

Using Office Web Apps

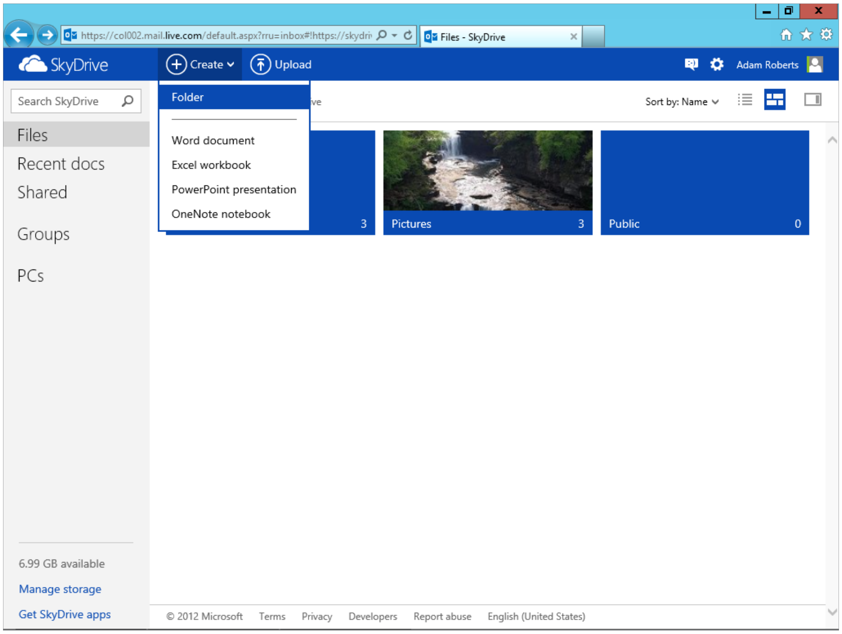
Windows Live includes Office web apps, which are free online versions of Microsoft Word, Microsoft Excel, Microsoft PowerPoint, and Microsoft OneNote applications. The Office web apps are not full-featured versions of the Microsoft Office suite of programs. However, Office web apps provide many of the most common commands and options found in their non–web-based versions.

The idea is that you may need to make some minor edits to Office files while you are away from a computer that has Microsoft Office installed on it. If that is the case, you can upload your file to SkyDrive and then open that file in the Office web page in which it was created. Similarly, if you are not able to access a computer with Office installed on it and you want to create a new document, spreadsheet, note, or presentation, you can do so with the Office web apps.

To use these apps, select the SkyDrive tool from the Windows Live top menu. Click the Create drop-down menu (see Figure 18.7) and select one of the following choices. For each of the choices, you need to enter a filename for the new file you want to create. Click Create to continue onto the editing screen of the Office web app you choose.

FIGURE 18.7

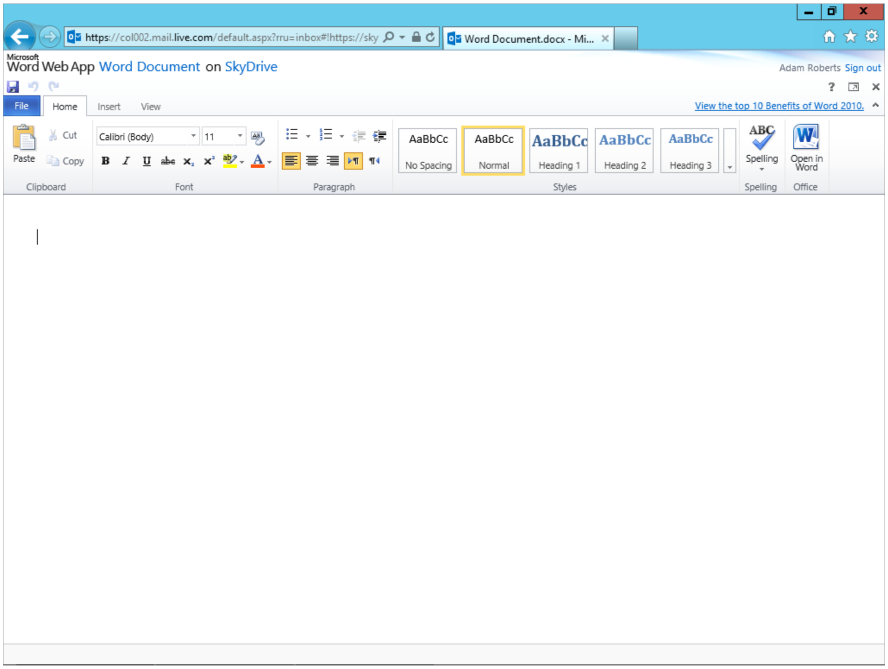
Use the Create drop-down menu to access Office web apps.


https://col002.mail.live.com/default.aspx?rru=inbox#!https://skydri
Files - SkyDrive
SkyDrive
Create
Upload
Adam Roberts
Search SkyDrive
Folder
Word document
Excel workbook
PowerPoint presentation
OneNote notebook
Sort by: Name
Files
Recent docs
Shared
Groups
PCs
3
Pictures
3
Public
0
6.99 GB available
Manage storage
Get SkyDrive apps
© 2012 Microsoft
Terms
Privacy
Developers
Report abuse
English (United States)

- **Word Document:** Launch the Word web app for creating a word processing document, as shown in Figure 18.8.

FIGURE 18.8

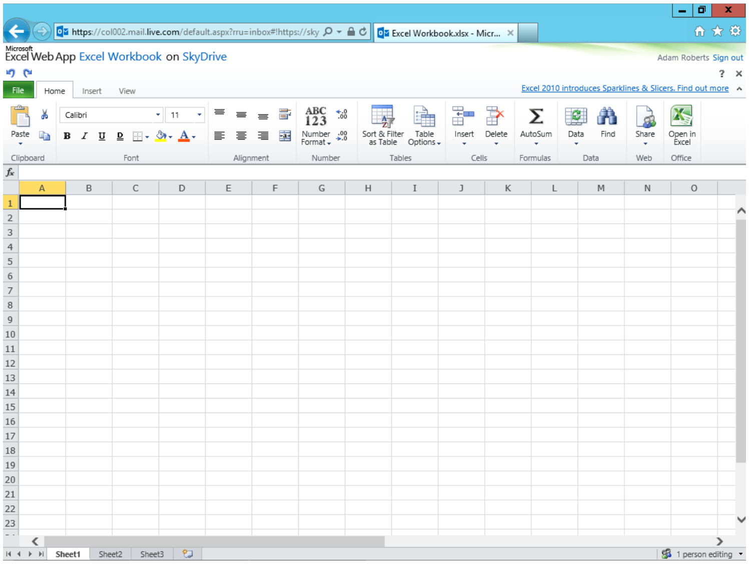
Create a new Microsoft Word document in the Word web app.


https://col002.mail.live.com/default.aspx?rru=inbox#!https://sky
Word Document.docx - Mi...
Microsoft Word Web App Word Document on SkyDrive
Adam Roberts Sign out
File
Home
Insert
View
View the top 10 Benefits of Word 2010.
Paste
Cut
Copy
Calibri (Body)
11
Clipboard
Font
Paragraph
AaBbCc No Spacing
AaBbCc Normal
AaBbCc Heading 1
AaBbCc Heading 2
AaBbCc Heading 3
Styles
Spelling
Open in Word
Spelling
Office

- **Excel Workbook:** Launch the Excel web app for creating a spreadsheet file, as shown in Figure 18.9.

FIGURE 18.9

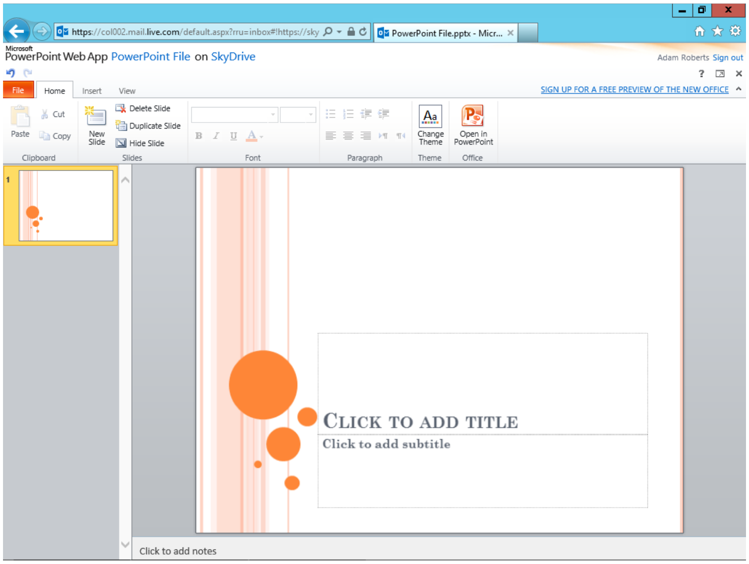
Create a new Microsoft Excel spreadsheet in the Excel web app.


https://col002.mail.live.com/default.aspx?rru=inbox#!https://sky
Excel Workbook.xlsx - Micr...
Microsoft Excel Web App Excel Workbook on SkyDrive
Adam Roberts Sign out
Excel 2010 introduces Sparklines & Slicers. Find out more
File
Home
Insert
View
Paste
Calibri
11
ABC 123 Number Format
Sort & Filter as Table
Table Options
Insert
Delete
AutoSum
Data
Find
Share
Open in Excel
Clipboard
Font
Alignment
Number
Tables
Cells
Formulas
Data
Web
Office
Sheet1
Sheet2
Sheet3
1 person editing

- **PowerPoint Presentation:** Launch the PowerPoint web app for creating a presentation file, as shown in Figure 18.10.

FIGURE 18.10

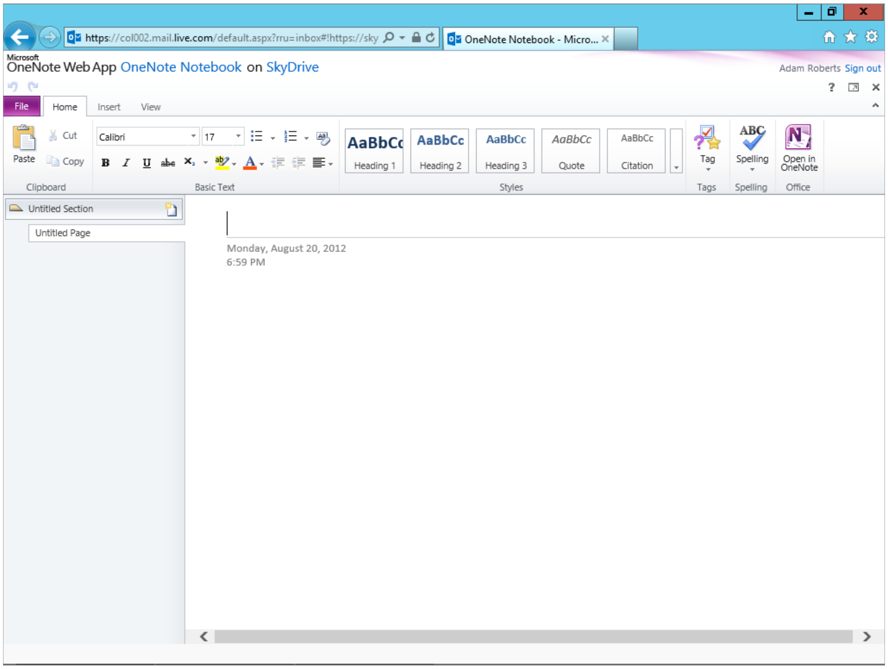
Create a new Microsoft PowerPoint presentation in the PowerPoint web app.


https://col002.mail.live.com/default.aspx?rru=inbox#!https://sky
PowerPoint File.pptx - Micr...
Microsoft PowerPoint Web App PowerPoint File on SkyDrive
Adam Roberts Sign out
SIGN UP FOR A FREE PREVIEW OF THE NEW OFFICE
File
Home
Insert
View
Paste
Cut
Copy
New Slide
Delete Slide
Duplicate Slide
Hide Slide
Change Theme
Open in PowerPoint
Clipboard
Slides
Font
Paragraph
Theme
Office
Click to add title
Click to add subtitle
Click to add notes

- **OneNote Notebook:** Launch the OneNote web app for creating a new note in OneNote, as shown in Figure 18.11.

FIGURE 18.11

Create a new Microsoft OneNote note in the OneNote web app.


https://col002.mail.live.com/default.aspx?rru=inbox#!https://sky
OneNote Notebook - Micro...
Microsoft
OneNote Web App OneNote Notebook on SkyDrive
Adam Roberts Sign out
File
Home
Insert
View
Paste
Cut
Copy
Clipboard
Calibri
17
Basic Text
AaBbCc
Heading 1
AaBbCc
Heading 2
AaBbCc
Heading 3
AaBbCc
Quote
AaBbCc
Citation
Styles
Tag
Tags
ABC
Spelling
Spelling
Open in OneNote
Office
Untitled Section
Untitled Page
Monday, August 20, 2012
6:59 PM

If you have copies of Microsoft Office 2010 installed on your computer, or if you regularly use it, you may notice how the web apps look very similar to the ones installed on your computer. This is done on purpose so users can get comfortable using the online or installed version and be able to transfer those skills to the other version. No relearning is required.

Files you create using the web apps do not have to be explicitly saved. Once you create the file, Windows Live automatically saves your files as you work on them in the Web App area.

TIP

Office web app files can be shared with other users. To do this, create or open a web app document. Click the File menu and choose Share. Type the e-mail address of a person you want to share the document with, enter a quick note about the file, and click Send. To share with people on Facebook, click the Post To Facebook link.

The web app files can be downloaded to your computer and opened in full versions of their corresponding Office application. For example, if you have Office 2010 installed on your computer, you can click the Open In Word tool on the Word Web App screen to download and open an online version of a Word file you are working on.

Wrap-Up

Windows 8 works well by itself or with online tools such as Windows Live. With Window Live, you can extend your workspace to allow you to store files in the cloud, use e-mail, and create files in Office web apps.

In summary:

- Access Windows Live at `http://outlook.com`.
- To save a file on SkyDrive, use the Add Files link on the SkyDrive screen.
- You can create Word, Excel, PowerPoint, and OneNote files using the Office web apps.

CHAPTER 19

Social Networking with Windows 8

IN THIS CHAPTER

- Using the People app
- Setting up social media accounts
- Viewing social media activity
- Navigating the People app

One of the most popular activities online is communicating using social media programs, such as Facebook, LinkedIn, Twitter, Google+, and YouTube.

The new Windows 8 People app lets you integrate your contracts and updates from multiple social network sites such as Windows Live, Facebook, and Twitter into one single location for that person. Also, the Mail and Messaging apps rely on the People app for selecting contacts to send e-mail and instant messages.

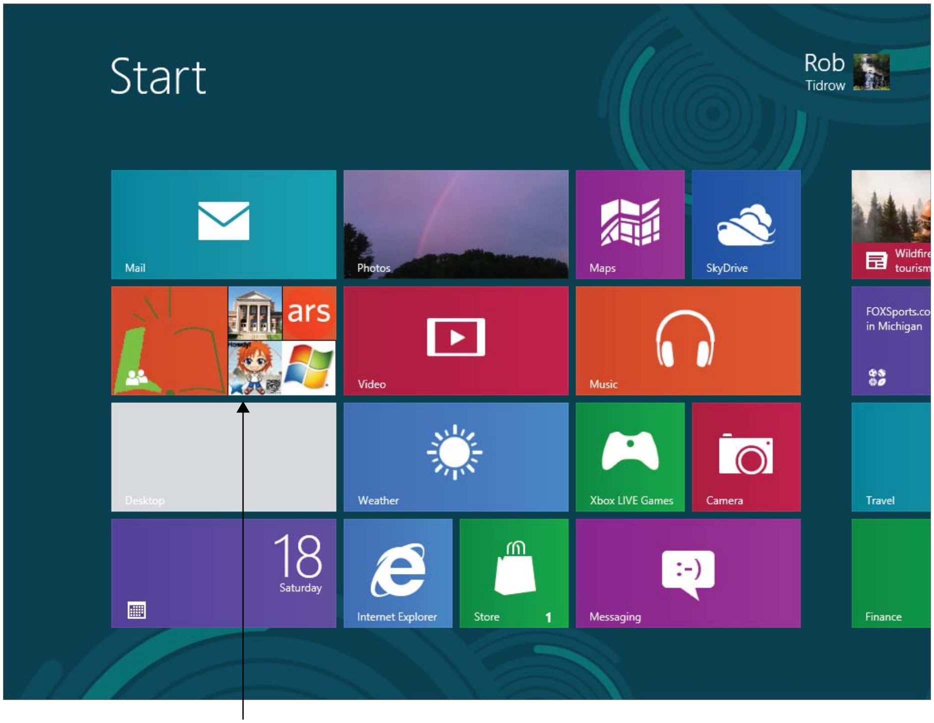
This chapter explores how to access various social media programs in Windows 8, including using the People app to consolidate many of your favorite social media communications into one app.

Using the People App

The Windows 8 People app is provided on the Windows Start screen when you install Windows 8. Figure 19.1 shows the People live tile. This tile displays information, updates, status changes, and photo changes for contacts you follow on different social media tools. For example, the information shown in Figure 19.1 shows Facebook friends.

FIGURE 19.1

The People app has a live tile on the Windows Start screen.


Start
Rob
Tidrow
Mail
Photos
Maps
SkyDrive
Wildfire
tourism
ars
Video
Music
FOXSports.co
in Michigan
Desktop
Weather
Xbox LIVE Games
Camera
Travel
18
Saturday
Internet Explorer
Store
1
Messaging
:-)
Finance

People app

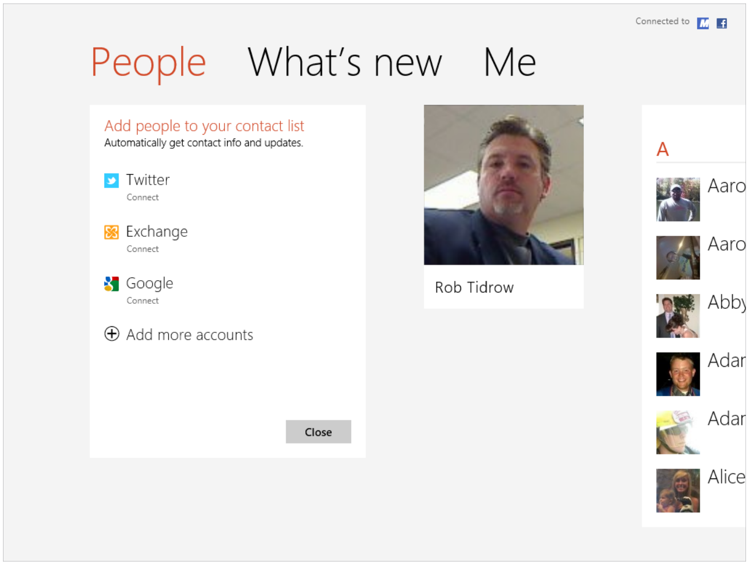
Setting up a social media account

You may not see any live updates on your People app as you have not set up any social media accounts under Windows 8 yet. To do that, use the following steps:

1. Show the Windows Start screen.
2. Click the People app. The People app screen appears. (See Figure 19.2.)

FIGURE 19.2

The People app setup screen


Connected to
People
What's new
Me

Add people to your contact list

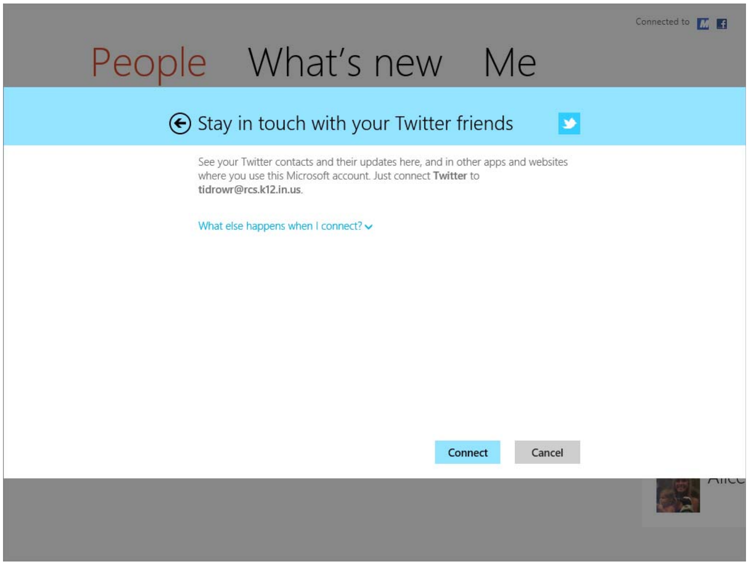
Automatically get contact info and updates.

Twitter
Connect
Exchange
Connect
Google
Connect
Add more accounts
Close
Rob Tidrow
A
Aaro
Aaro
Abby
Adar
Adar
Alice

3. Click a social media tool to set up your account information for it. For example, Figure 19.3 shows setting up account information for the Twitter social media tool.

FIGURE 19.3

Setting up Twitter to work with the People app


Connected to
People
What's new
Me

Stay in touch with your Twitter friends

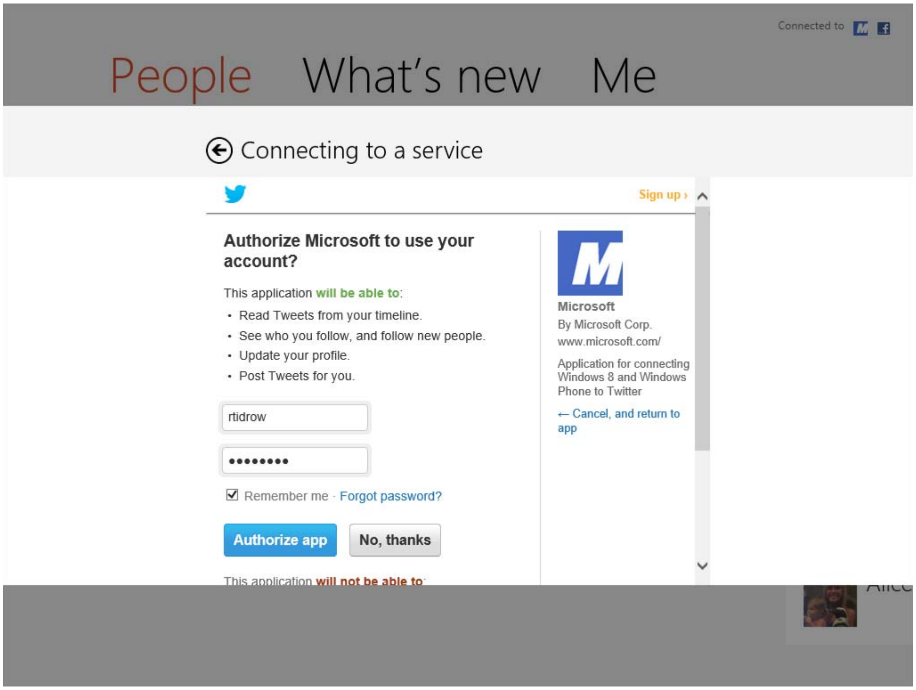
See your Twitter contacts and their updates here, and in other apps and websites where you use this Microsoft account. Just connect **Twitter** to **tidrowr@rcs.k12.in.us**.

What else happens when I connect?
Connect
Cancel

4. Click Connect to connect Twitter to your Microsoft account. The Connecting To A Service screen appears.
5. Enter your Twitter username and password to authorize Microsoft to use your account to read tweets, see whom you follow, and perform other tasks as they relate to using the Twitter service (see Figure 19.4). A similar screen appears for the other social media services you set up with the People app.

FIGURE 19.4

You must authorize Microsoft to use your Twitter or other social media tool account.


Connected to
People
What's new
Me
Connecting to a service
Sign up ›

Authorize Microsoft to use your account?

This application **will be able to**:

- Read Tweets from your timeline.
- See who you follow, and follow new people.
- Update your profile.
- Post Tweets for you.

rtidrow

••••••••

☑ Remember me · Forgot password?
Authorize app
No, thanks

This application **will not be able to**:

Microsoft
By Microsoft Corp.
www.microsoft.com/

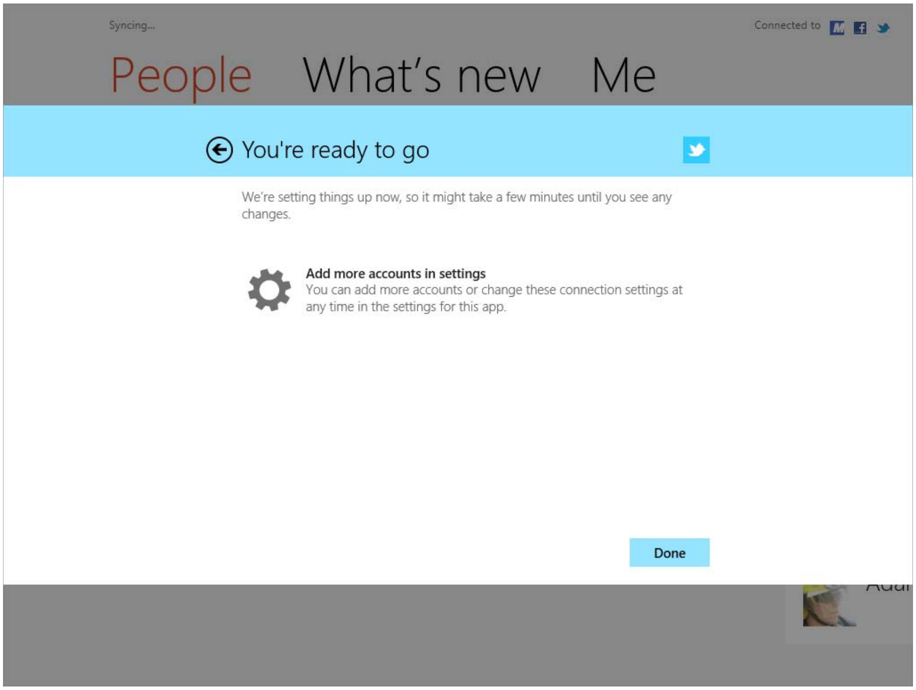
Application for connecting Windows 8 and Windows Phone to Twitter

← Cancel, and return to app

6. Click Remember Me if you want the People app to store your username and password.
7. Click Authorize App. After a few moments, you are shown the You're Ready To Go screen, which is shown in Figure 19.5.
8. Click Done.

FIGURE 19.5

The You're Ready To Go screen displays after you set up a social media account.



We're setting things up now, so it might take a few minutes until you see any changes.

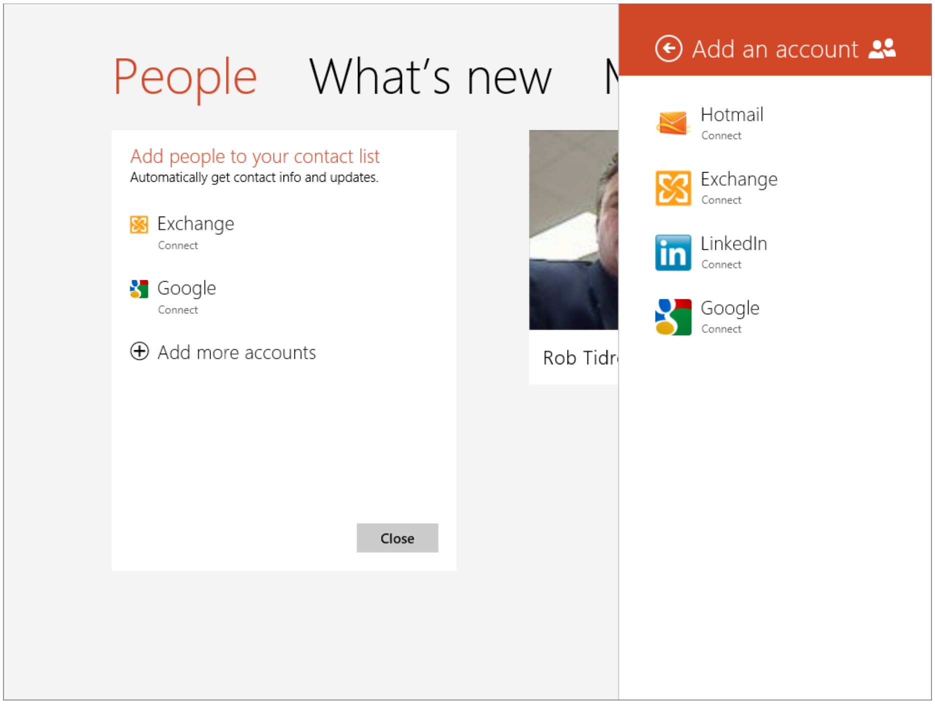
Add more accounts in settings
You can add more accounts or change these connection settings at any time in the settings for this app.

NOTE
When authorizing Microsoft to use your social media accounts, you should note that Microsoft cannot access your direct messages, nor can it see your password.

After you set up one account, you return to the main People app screen. You can choose to set up other accounts, such as Exchange or Google accounts from the Add People To Your Contact List area. You can click the Add More Accounts link to see additional accounts you can set up, as shown in Figure 19.6. This example shows the option to set up Hotmail or LinkedIn accounts.

FIGURE 19.6

Use the Add An Account screen to see which other social media tools are available.


People
What's new
Add people to your contact list
Exchange
Connect
Google
Connect
Add more accounts
Close
Rob Tidr
Add an account
Hotmail
Connect
Exchange
Connect
LinkedIn
Connect
Google
Connect

Automatically get contact info and updates.

Viewing social media activity

The People app is currently designed to allow you to view activity of your contacts and see their social media messages, status updates, and photos. It is divided into three main areas: People, What's New, and Me. By default, the People view shows you a list of your favorite contacts and then a list of your contacts from Twitter, Exchange, Google, Facebook, LinkedIn, and Hotmail accounts.

Figure 19.7 shows an example of the first screen of the People app look. This screen is set up to include Favorites on the left side, with a list of contacts to the right. Figure 19.8 shows how contacts are listed in the People app.

FIGURE 19.7

The People app provides a complete view of your contacts in one place.

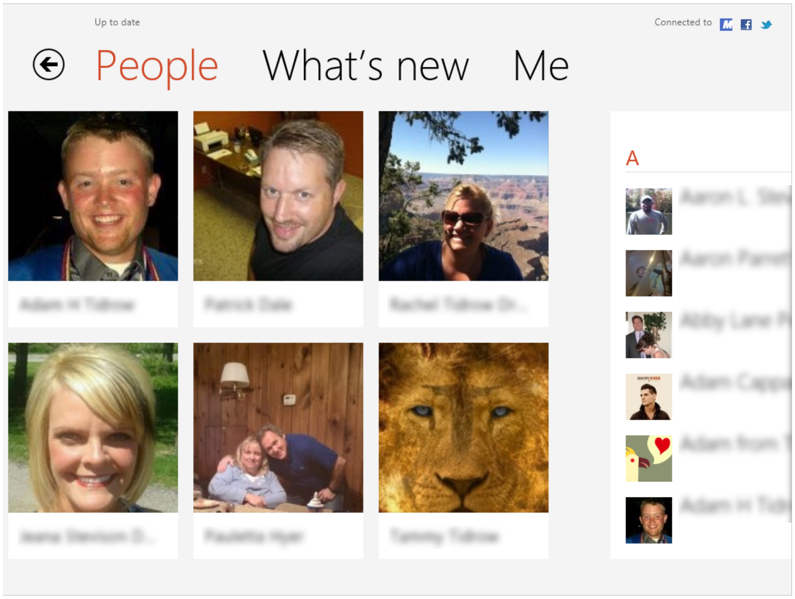
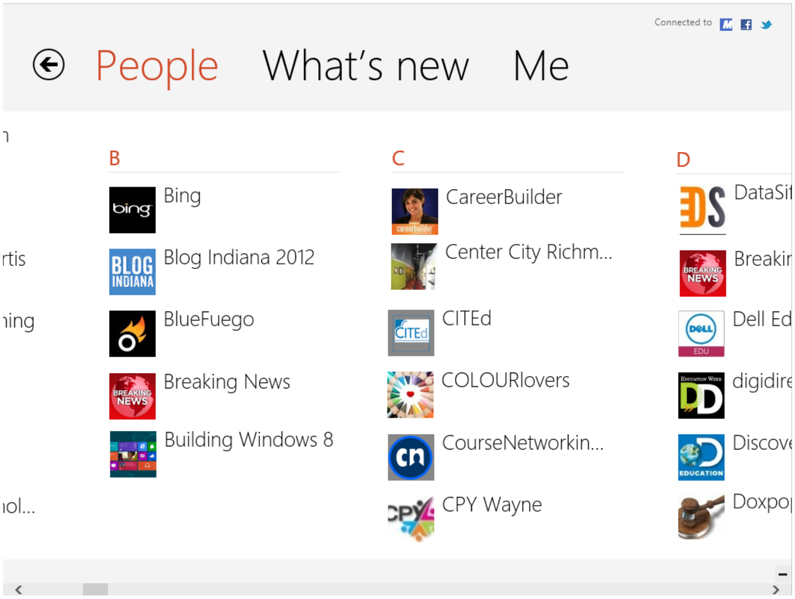

Up to date
Connected to
People
What's new
Me
A

FIGURE 19.8

The People app showing a list of contacts.

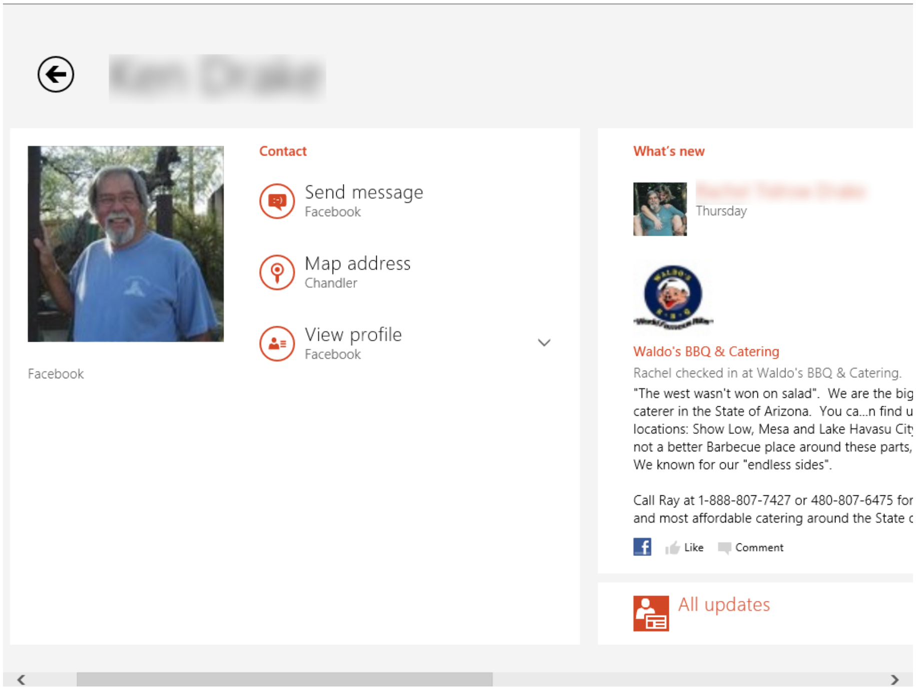

Connected to
People
What's new
Me
B
Bing
Blog Indiana 2012
BlueFuego
Breaking News
Building Windows 8
C
CareerBuilder
Center City Richm...
CITEd
COLOURlovers
CourseNetworkin...
CPY Wayne
D
DataSi
Breakir
Dell Ed
digidire
Discove
Doxpo

To view a contact's current information and postings, click on that person's tile. A contact card like the one shown in Figure 19.9 appears. On that card, you can do the following:

- View a current photo of the contact.
- Send a message.
- Get a Bing map of the contact's location.
- View the contact's profile information. Click the down arrow and click More Details to additional profile information, such as full address if available.
- In this area, you can Like and Comment on Facebook comments, and you can retweet and reply to Twitter messages (called "tweets").
- All Updates shows an expanded view of photos, uploads, status changes, postings, and so forth.
- Photos shows profile pictures, albums, and other photographic features posted by the contact.

FIGURE 19.9

Viewing a contact card in the People app


[redacted]
Facebook
Contact
Send message
Facebook
Map address
Chandler
View profile
Facebook
What's new
[redacted]
Thursday
Waldo's BBQ & Catering
Like
Comment
All updates

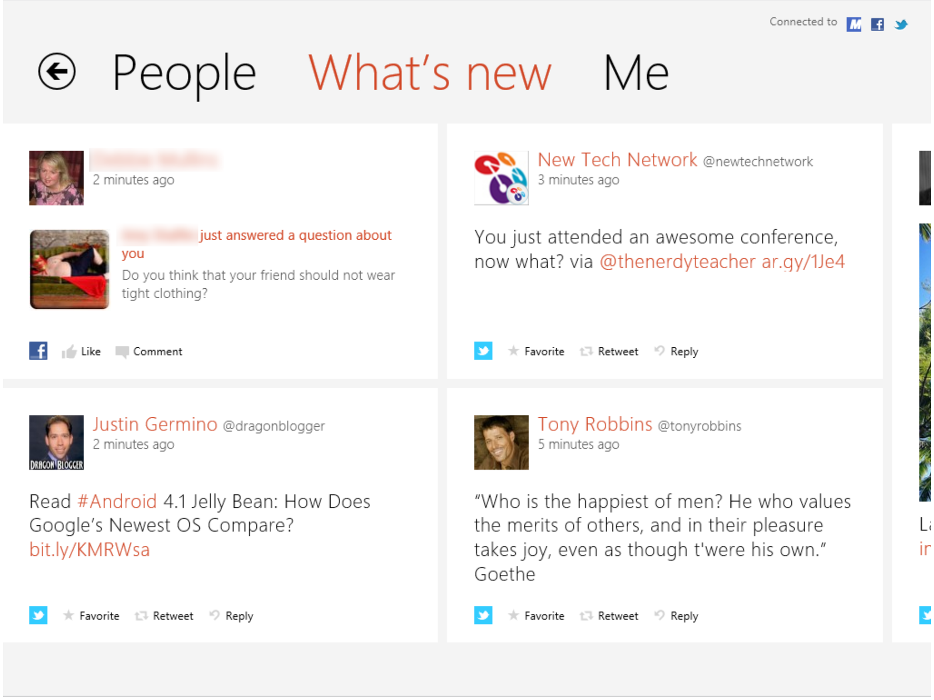
Rachel checked in at Waldo's BBQ & Catering.
"The west wasn't won on salad". We are the big
caterer in the State of Arizona. You ca...n find u
locations: Show Low, Mesa and Lake Havasu City
not a better Barbecue place around these parts,
We known for our "endless sides".

Call Ray at 1-888-807-7427 or 480-807-6475 for
and most affordable catering around the State c

When you return to the first screen of your People's app, the second main area is What's New. When you click What's New, you are shown the latest posting by people in your list of contacts. By looking at the bottom of each posting, you can see which social media tool was used to post that message. For example, in Figure 19.10, four posts are shown. The top-left post was from Debbie on Facebook. The other three posts were tweets from some Twitter accounts.

FIGURE 19.10

What's New shows you the latest posts from your contacts.



[redacted]
2 minutes ago

[redacted] just answered a question about you
Do you think that your friend should not wear tight clothing?

New Tech Network @newtechnetwork
3 minutes ago

You just attended an awesome conference, now what? via @thenerdyteacher ar.gy/1Je4

Justin Germino @dragonblogger
2 minutes ago

Read #Android 4.1 Jelly Bean: How Does Google's Newest OS Compare? bit.ly/KMRWsa

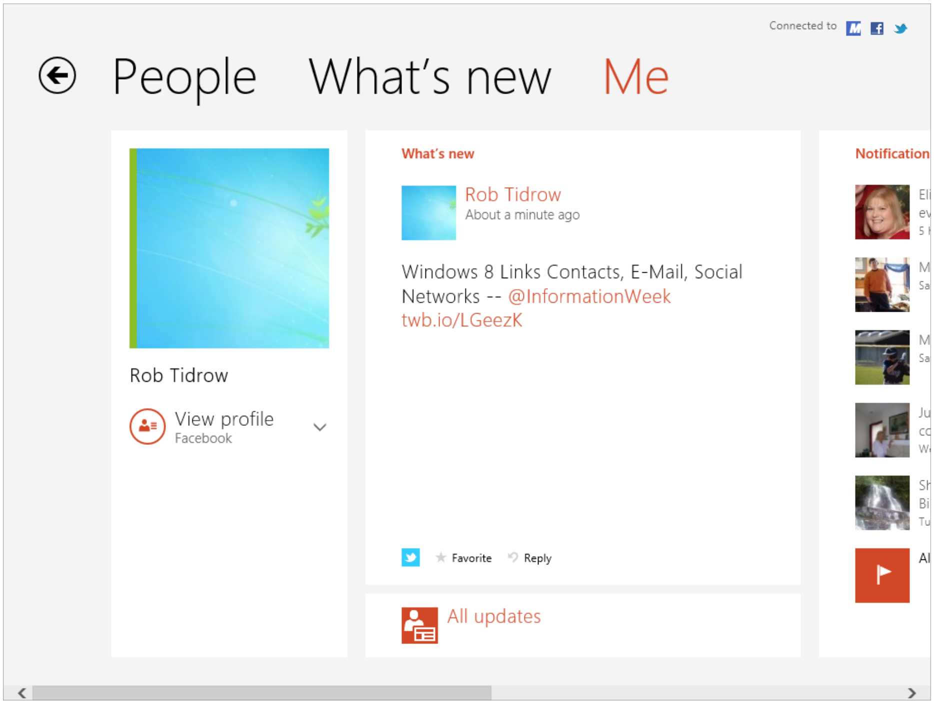
Tony Robbins @tonyrobbins
5 minutes ago

"Who is the happiest of men? He who values the merits of others, and in their pleasure takes joy, even as though t'were his own." Goethe

The final main area is the Me area (see Figure 19.11). Me shows the contact card set up for you, any recent updates and postings you have made, updates, and notifications. The Notifications area shows messages sent to you or comments made on one of your Facebook posts. The photos section shows photos you've posted and profile pictures. Right-click and choose Edit to display your profile for you to edit.

FIGURE 19.11

The Me area shows information about you, notifications, your latest posts, and photos you've posted.


Connected to
People
What's new
Me
Rob Tidrow
View profile
Facebook
What's new
Rob Tidrow
About a minute ago
Favorite
Reply
All updates
Notification

Windows 8 Links Contacts, E-Mail, Social Networks -- @InformationWeek twb.io/LGeezK

Navigating the People app

The People app is fairly easy to navigate by using your mouse or touch screen actions (such as swiping to the left or right). You can display the People app menu by right-clicking. Contextual commands for the items you are currently viewing display in that menu. Also, the People button returns you to the main People app screen when you click it.

Wrap-Up

Social networking is one of the most popular shared activities in the world. Windows 8 makes it easy to follow all your contacts in one central location using the People app.

Here's a quick summary of the main points presented in this chapter:

- You use the People app to follow your contacts' activities in social media tools.
- The People app supports Facebook, Twitter, Google, LinkedIn, Exchange, and Hotmail.
- The People app is divided into three main areas: People, What's New, and Me.

CHAPTER

20

Using Computers Remotely

IN THIS CHAPTER

Getting Remote Assistance

Using a Remote Desktop connection

Remote Assistance lets you turn control of your computer over to a trusted expert for advice, troubleshooting, or general support. Remote Desktop allows you to control a remote computer from whatever computer you happen to be using. Both of these topics are covered in this chapter.

Using Remote Assistance

Remote Assistance is a way to give control of your computer to a trusted expert. A trusted expert is any computer expert you know well enough to trust not to damage your computer or steal any personal information. It might be someone from Desktop Support at your place of business. It may be a friend or relative who just happens to be a computer expert. Whoever it is, you have to find him or her yourself. Remote Assistance provides you only the *ability* to let a trusted expert operate your computer from afar. It doesn't provide the trusted expert.

Remote Assistance and Firewalls

If you have any trouble using Remote Assistance, make sure that it's listed as an exception in Windows Firewall. To do so, open Windows Firewall from the Control Panel. Click the Allow A Program Or Feature Through Windows Firewall link. Select Remote Assistance and click OK. Note that to send e-mail requests for Remote Assistance, you must enable Windows Remote Assistance for Public connections. In addition, if your computer sits behind a perimeter firewall (DSL router, wireless access point, or other hardware firewall), both your local firewall and the remote firewall must support Universal Plug and Play (UPnP) to support Remote Assistance without any special configuration. Or, if the firewall in front of the system requesting Remote Assistance doesn't support UPnP, you need to use port forwarding to get the incoming Remote Assistance traffic to the computer. How you set up port forwarding depends entirely on the type of firewall you have. Essentially, you need to create a rule in the firewall to forward incoming traffic for port 3389 to the computer that needs Remote Assistance. For additional information, contact your local ISP or contact your network administrator.

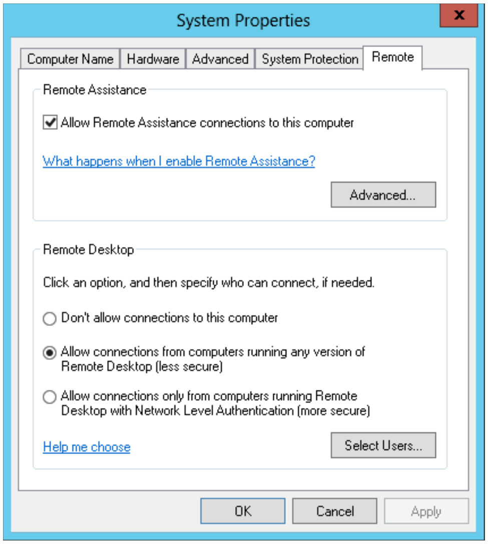
Setting up Remote Assistance

Before you try to use Remote Assistance, make sure that it's enabled in your user account. This requires administrative privileges. You find options for enabling and disabling Remote Assistance in the System Properties dialog box. Here's a quick and easy way to get to those options:

1. At the Windows Start screen, start typing the word **assistance**. Click Settings and then choose the Allow Remote Access To Your Computer option in the results area.
2. If prompted, enter an administrative password. The Remote tab of the System Properties dialog box, shown in Figure 20.1, opens.
3. If you want to allow the computer to be used in Remote Assistance sessions, select the Allow Remote Assistance Connections To This Computer check box. Otherwise, the computer cannot be used for Remote Assistance.
4. Optionally, click the Advanced button. Then, to allow trusted experts to control the computer remotely, select the Allow This Computer To Be Controlled Remotely option.
5. Optionally, set a time limit on how long Remote Assistance invitations remain open. Also, you can limit Remote Assistance to other computers running Windows Vista or later versions of Windows.
6. Click OK.
7. Click OK again.

FIGURE 20.1

System Properties Remote tab



Remote Assistance

☑ Allow Remote Assistance connections to this computer

Remote Desktop

Click an option, and then specify who can connect, if needed.

○ Don't allow connections to this computer

● Allow connections from computers running any version of Remote Desktop (less secure)

○ Allow connections only from computers running Remote Desktop with Network Level Authentication (more secure)

The next section assumes that you've allowed Remote Assistance in the preceding steps.

Requesting Remote Assistance

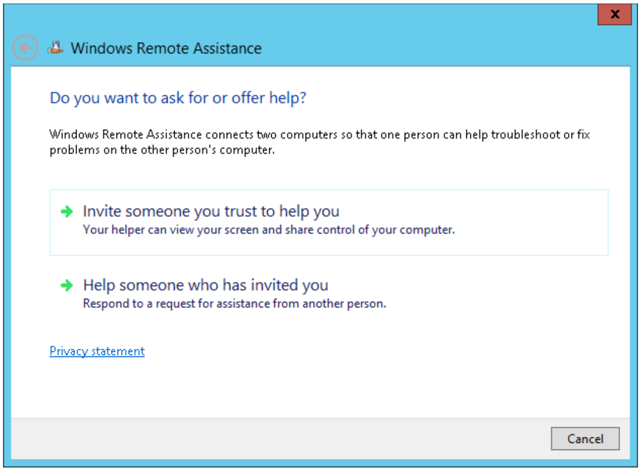
Before you allow a trusted expert to take over your computer online, you need to agree on a time and a password. For security reasons, it would be best to agree on a password over the phone or in person.

If you know the e-mail address of an expert you can trust to help with your computer, follow these steps to send a Remote Assistance request:

1. Show the Charms Bar.
2. Choose Search.
3. Type **Assistance**.
4. Click Settings.
5. Choose Invite Someone To Connect To Your PC And Help You, or Offer To Help Someone Else. The Windows Remote Assistance window appears, as shown in Figure 20.2.
6. Click Invite Someone You Trust To Help You. A window like the one shown in Figure 20.3 appears.

FIGURE 20.2

Windows Remote Assistance window



Windows Remote Assistance

Do you want to ask for or offer help?

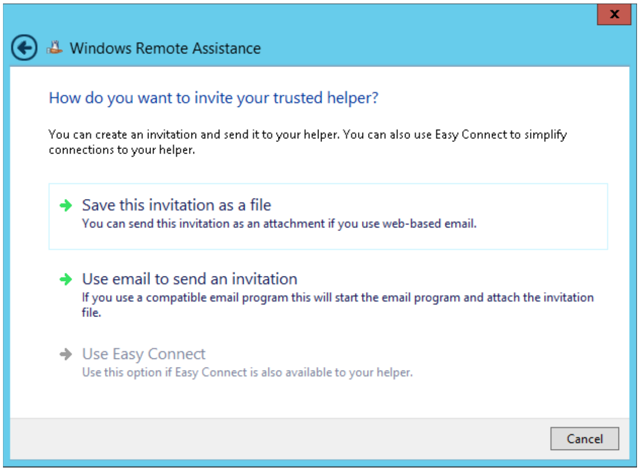
Windows Remote Assistance connects two computers so that one person can help troubleshoot or fix problems on the other person's computer.

Invite someone you trust to help you
Your helper can view your screen and share control of your computer.

Help someone who has invited you
Respond to a request for assistance from another person.

FIGURE 20.3

Creating an invitation for someone to help you solve a problem on your computer



How do you want to invite your trusted helper?

You can create an invitation and send it to your helper. You can also use Easy Connect to simplify connections to your helper.

→ Save this invitation as a file
You can send this invitation as an attachment if you use web-based email.

→ Use email to send an invitation
If you use a compatible email program this will start the email program and attach the invitation file.

→ Use Easy Connect
Use this option if Easy Connect is also available to your helper.

How you proceed from there depends on how you use e-mail. If you use Windows Mail or another e-mail client that's compatible with Windows 8, follow these steps:

1. Click Use E-Mail To Send An Invitation.
2. Type the expert's e-mail address in the To box and click Send.
3. If your e-mail client isn't configured to send mail immediately, open that program and perform a Send/Receive.

If you use web mail, follow these steps instead:

1. Click Save This Invitation As A File.
2. Choose a location in which to save the file and click Save.
3. Compose an e-mail message to the expert and attach the Invitation (or `Invitation.msrcincident`) file to that message using the standard method for your e-mail service. Then send the message normally.
4. Compose a second message to the expert and enter the Remote Assistance password that shows on your screen. Send the message.

TIP

If you don't know how to attach files to messages, search your e-mail service's support using "Attach" as the keyword, or ask your trusted expert.

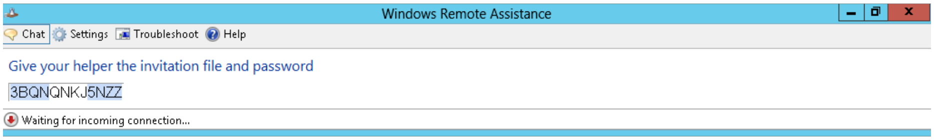
The e-mail message is sent to the trusted expert. You see the Windows Remote Assistance window, shown in Figure 20.4.

NOTE

If you close the Windows Remote Assistance window, your invitation will expire and the expert won't be able to connect. You will need to repeat the previous steps to create a new invitation.

FIGURE 20.4

Windows Remote Assistance window



Give your helper the invitation file and password

3BQNQNKJ5NZZ

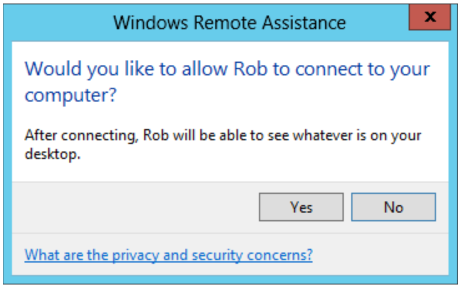
Waiting for incoming connection...

The trusted expert needs to receive your e-mail and open the attached file. Remember to also provide the password in the Remote Assistance window to your trusted expert. Remote Assistance doesn't send that in the e-mail so you need to send that to the other person in a separate e-mail or by phone. Then, the trusted expert can enter the password in the Remote Assistance window on his or her end.

After your expert has done all that, you see a new message on the screen (like the one shown in Figure 20.5) asking whether you're willing to allow your helper to connect to your computer. Choose Yes.

FIGURE 20.5

Allowing someone to connect to your computer



Would you like to allow Rob to connect to your computer?

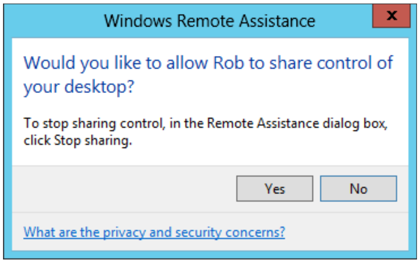
After connecting, Rob will be able to see whatever is on your desktop.

What are the privacy and security concerns?

When connected, the trusted expert sees your screen and options for chatting, requesting control of the computer, sending a file, and starting a voice conversation. To operate your computer from afar, the expert needs to take control of your computer, which she can do by clicking Request Control at her end. Depending on the computer that the trusted expert is using (such as Windows Vista), you may see another message asking if you're willing to share control (shown in Figure 20.6). Again, you have to choose Yes.

FIGURE 20.6

Allowing someone to control your computer remotely



Windows Remote Assistance

Would you like to allow Rob to share control of your desktop?

To stop sharing control, in the Remote Assistance dialog box, click Stop sharing.

You'll be able to see everything the expert is doing while he or she has control of your computer. On the expert's computer, the following icons are available in the Remote Assistance window for actions they can perform connected:

- **Disconnect:** Terminates the connection. The expert loses all access to your computer.
- **Request Control:** Allows the expert to take control of your computer from a remote location.
- **Stop Sharing:** Keeps the expert connected visually, but the expert can't operate your computer.
- **Pause:** Temporarily breaks the expert's connection to your computer. Click Continue to reestablish the connection.
- **Fit To Screen:** Resizes the display of the remote computer so it fills the entire screen.
- **Settings:** Takes you to a Settings dialog box, where you can control some optional Remote Assistance settings. (Click "What do these settings do?" in that dialog box for details.)
- **Chat:** Opens a chat window so that you and the expert can communicate during the session.
- **Send File:** Lets you send one or more files to the expert.
- **Help:** Opens Windows Help And Support.

At any time, you can click the Stop Sharing button on your screen to take back control of your computer. Similarly, the expert on the other end can click Stop Sharing to stop the sharing session and give you back control of your computer.

While the expert has control of your computer, he or she can use your computer just like you can. As the expert moves around your computer, opening applications, setting options, or displaying the Windows 8 interface, you can sit back and watch. This is one way in which you can learn new troubleshooting steps or application procedures if you are stumped on how to make something work or improve Windows performance.

When the expert has finished working or if you want to stop sharing your desktop, click the Stop Sharing button and close the Remote Assistance window. The expert can click the Disconnect button to end the session.

Using the Remote Desktop App

The Remote Desktop app allows you to control a computer from a remote location. It's often used to access computers on a corporate network from a home PC or vice versa. It is also very commonly used by system administrators to remotely manage Windows servers. Remote Desktop is different from Remote Assistance in that, with Remote Desktop, you are remotely logging on to a computer and controlling it remotely as a single user. With Remote Assistance, the session includes the local user and the remote expert.

Before you can connect to a remote computer on your office network, a network administrator on the corporate side needs to set up that capability, enabling Remote Desktop connections inbound to the network (or providing a VPN connection to the remote network for the user). Likewise, if you want to connect to your home computer from the office, you need to configure your home firewall to forward port 3389 to the home computer you want to manage. How you configure the firewall depends on the firewall, so we can't give you specific steps. At this point, we assume that whichever direction you're going, the necessary network and firewall changes are in place to make it possible.

TIP

If you are connecting to another computer on the same network segment as the one your computer is on, no firewall configuration is needed other than having Remote Assistance in Windows Firewall enabled.

To connect to the remote computer, you need to know either the hostname of the computer or its IP address. If the computer is on your local network segment, you can use the computer name. To connect to a computer on a remote network segment, you need to use either the fully-qualified domain name (FQDN) of the remote computer or its externally facing IP address. This IP address is the public address that is mapped in the firewall to the private address assigned to the computer. The computers you connect to must be set up to allow Remote Desktop connectivity.

NOTE

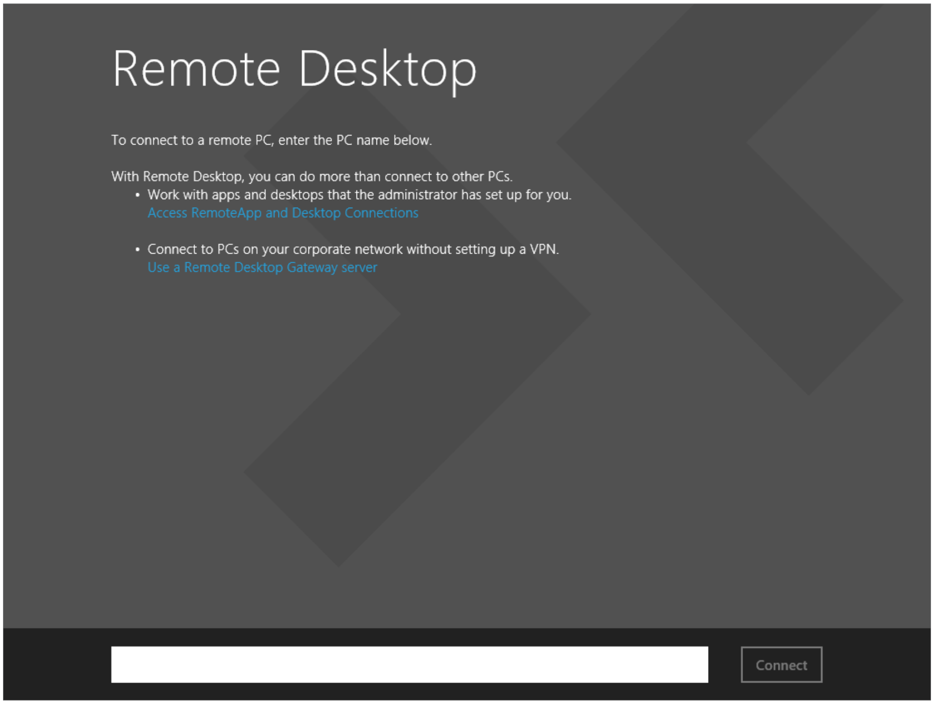
An FQDN is a name in the common *`host.domain.tld`* **format.**

When you have the information you need, making the connection should be easy. You have to be online, of course. If the company requires connecting through a Virtual Private Network (VPN), make that connection as specified by your company's network administrator. With Windows 8, you also have the option of using a Remote Desktop Gateway server, if your company allows it. With the Remote Desktop Gateway server, a VPN is not required to be set up.

Next, open Remote Desktop by clicking the Windows 8 Remote Desktop icon. The Remote Desktop app opens, as shown in Figure 20.7.

FIGURE 20.7

The Remote Desktop app



Remote Desktop

To connect to a remote PC, enter the PC name below.

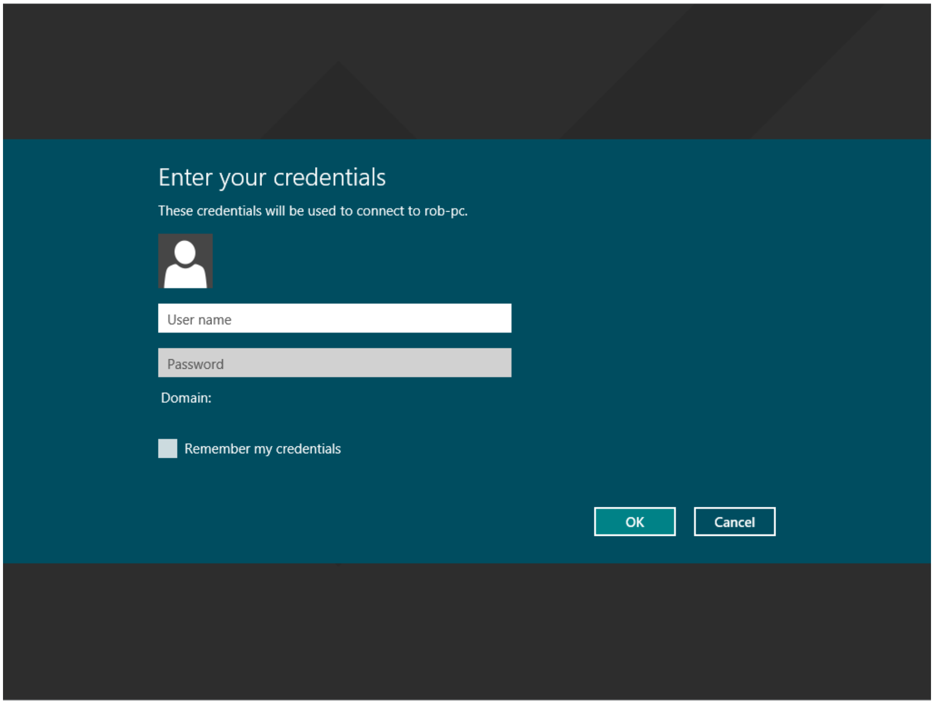
With Remote Desktop, you can do more than connect to other PCs.
- Work with apps and desktops that the administrator has set up for you.
  Access RemoteApp and Desktop Connections
- Connect to PCs on your corporate network without setting up a VPN.
  Use a Remote Desktop Gateway server

In the field at the bottom of the Remote Desktop app window, type the name of the PC to which you want to connect. Click Connect or press Enter.

If the remote computer is password-protected, the Enter Your Credentials window appears, which looks like the one shown in Figure 20.8. Enter credentials that will allow you access to the remote computer. If you do not have an account on the remote computer, or you do not know the username and password of a user on that remote computer, you will not be allowed to connect to it.

FIGURE 20.8

Enter credentials to connect to the remote computer



Enter your credentials

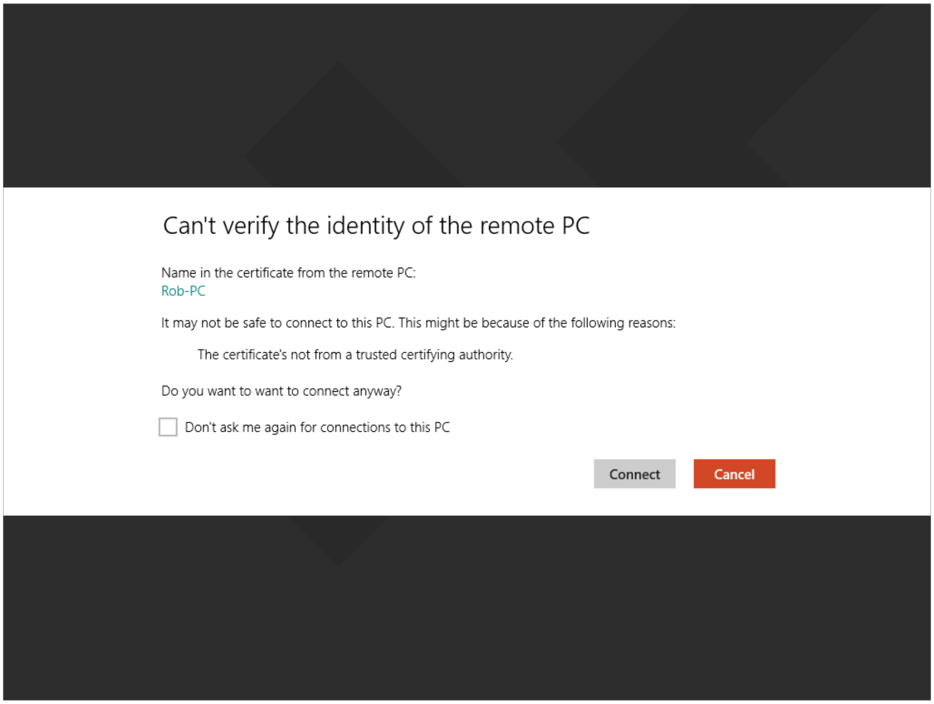
These credentials will be used to connect to rob-pc.

After you enter the credentials, you can click the Remember My Credentials check box to store those credentials for the remote computer. This will enable you to connect to the remote computer next time without entering credentials. Click Connect.

If the identity of the remote computer cannot be verified using a security certificate, the Can't Verify The Identity Of The Remote PC window appears (see Figure 20.9). For our example, we know the identity of the remote computer is valid. Before continuing, you might first want to select Don't Ask Me Again For Connections To This PC if you plan on connecting to this computer again in the near future. To continue, click Connect.

FIGURE 20.9

The Remote Desktop app cannot verify the identity of the remote computer



Can't verify the identity of the remote PC

Name in the certificate from the remote PC:
Rob-PC

It may not be safe to connect to this PC. This might be because of the following reasons:

The certificate's not from a trusted certifying authority.

Do you want to want to connect anyway?

☐ Don't ask me again for connections to this PC

Allowing remote connections on a home network

You can also use Remote Desktop to control your Windows 8 PC from any other PC within your home network. For example, say you have a notebook computer that you use for work and a home computer that you use for personal use. You no longer need to hook up a monitor, keyboard, or mouse to the home computer, but instead you can simply open a Remote Desktop connection to it any time you need to use it. Likewise, you can connect to the other computers in the house when you need to fix something on them.

NOTE

Remote Desktop is not required for normal home networking tasks such as sharing folders, files, and printers. Nor is it required to access those shared resources. You use Remote Desktop only if you want to operate the remote computer from the screen, keyboard, and mouse on another computer in the network.

Because the notebook computer has a wireless connection to your home network, you can use your personal PCs from anywhere in the house, even outside on the deck when the weather is nice.

To set up this type of remote connection, you first need a home network. The computer you want to control remotely needs a version of Windows that offers Remote Desktop, including Windows 8, Windows 7, Windows Vista, and Windows XP. Finally, you can log in only to password-protected accounts on the Windows 8 computer. It can be a standard account, but it has to be password-protected.

The remote computer also needs to have a version of Windows that supports Remote Desktop. Home versions of Windows, such as Windows 8 Home, do not include Remote Desktop capability that would allow you to connect to them remotely, but they include a client that enables them to connect to other computers that do support it.

Assuming that you have all the hardware and software to meet the requirements, the first step is to set up the Windows 8 computer to allow remote connections. Doing so requires administrative privileges and the following steps:

1. On the Windows 8 computer, log in to an account that has administrative privileges.
2. Display the Desktop.
3. Press Windows+X.
4. Choose Control Panel.
5. Choose Large Icons or Small Icons from the View By drop-down list.
6. Choose System.
7. Click Remote Settings in the left pane.
8. On the Remote tab, under the Remote Desktop heading, choose the Allow Remote Connections To This Computer option.

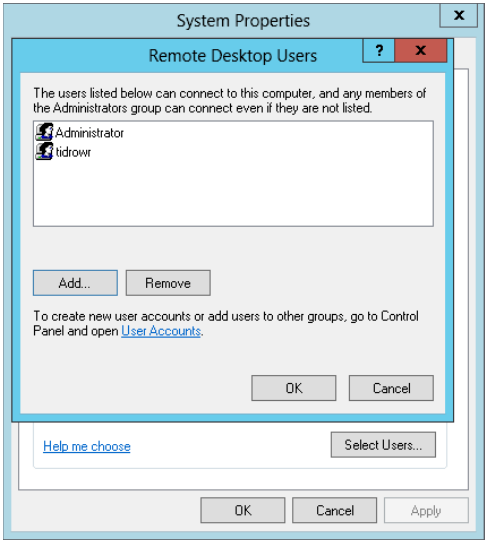
NOTE

The last option in the list of Remote Desktop choices, NLA (Network Level Authentication), provides more-secure Remote Desktop connections but isn't available in older Windows versions. For more information, click the Help Me Choose link.

9. Click the Select Users button.
10. Use the Add button to add usernames of people who are allowed to connect remotely. The administrator is added to the list automatically. In Figure 20.10, we've added the username tidrowr as the second person who can connect remotely.
11. Click OK in each open dialog box.

FIGURE 20.10

Added user tidrowr as a Remote Desktop user



The users listed below can connect to this computer, and any members of the Administrators group can connect even if they are not listed.

Administrator
tidrowr

To create new user accounts or add users to other groups, go to Control Panel and open User Accounts.

Make sure you know the computer name or IP address of the Windows 8 computer. You can see the name to the right of the Computer Name label on the main page of System Properties. For the sake of example, we're naming the Windows 8 computer Bowser. To find the IP address of the computer, log in to the computer you want to control remotely. On the desktop, press Windows + X and choose the Command prompt. Then type **ipconfig** in the command console window and press Enter. The IP address appears on the IPv4 Address line and is in the form similar to the following: 192.168.2.12.

Connecting from a remote home network PC

To connect remotely to the Windows 8 PC from another network in your LAN, open the Remote Desktop app on your local computer.

In the window that opens, enter the remote computer's IP address or computer name (Rob-PC, in our example) and click Connect. If the user account name of the computer at which you're sitting is different from the user account on the Windows 8 computer, click Use Another User. Type in the username and password for the user account on the Windows 8 computer and click OK or press Enter.

Depending on the display settings you used for the connection, the remote computer's screen eithers appear in a window or fills your local display. If you are running the connection in full-screen mode, move the mouse to the top of the screen to access the connection bar, which you can use to minimize, restore, or close the connection. From the local computer, you use the remote computer exactly as you would if you were sitting at that computer. When you've finished with your remote session, log out of the remote user account. That is, click the connection bar and click the close button. If connecting remotely to an earlier version of Windows, such as Windows 7 or Windows Vista, choose the Start button on the remote computer and choose the Log Off option.

For more information, check the Remote Desktop Help on both computers that you intend to use in your own local network.

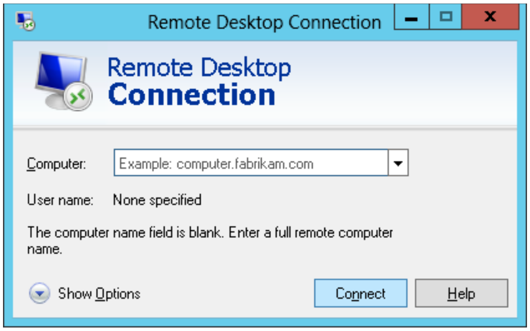
Using Classic Remote Desktop

Although the new Windows 8 Remote Desktop app provides a Windows 8 interface and is easy to use, you may be more comfortable using the previous version of Remote Desktop Connection. If that is the case, you can still run it, but you must launch it from its executable filename: `MSTSC.EXE`. Use the following steps to launch it:

1. Display the Charms Bar.
2. Click Search.
3. Type **MSTSC** and press Enter. The Remote Desktop Connection window appears (see Figure 20.11).

FIGURE 20.11

The classic Remote Desktop Connection window



Computer: Example: computer.fabrikam.com

User name: None specified

The computer name field is blank. Enter a full remote computer name.

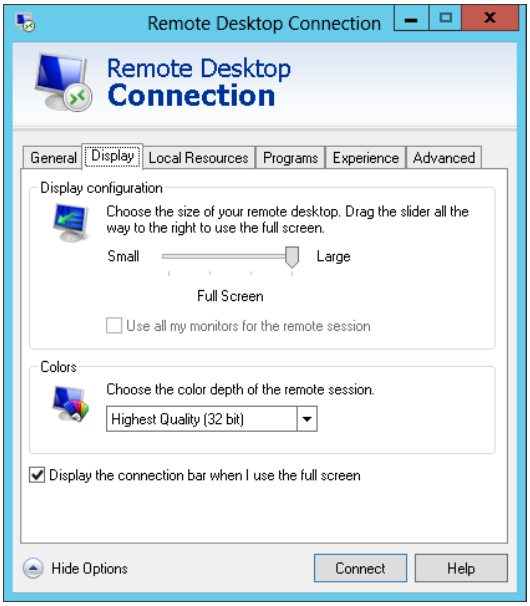
Before you connect to a remote computer, you might want to click the Show Options button and take a look at the options on the various tabs. The only required option is the name or IP address of the computer to which you're connecting. The following sections describe the tabs and options.

Display

Use the Display Configuration settings on the Display tab (shown in Figure 20.12) to specify the screen resolution for the Remote Desktop connection. If you have multiple monitors connected to the local computer, you can select the option Use All My Monitors For The Remote Session to span the Remote Desktop session across your multiple monitors.

FIGURE 20.12

The classic Remote Desktop Connection Display tab



Remote Desktop Connection
Remote Desktop
Connection
General
Display
Local Resources
Programs
Experience
Advanced
Display configuration
Small
Large
Colors
Hide Options
Connect
Help

Choose the size of your remote desktop. Drag the slider all the way to the right to use the full screen.

Full Screen

☐ Use all my monitors for the remote session

Choose the color depth of the remote session.

Highest Quality (32 bit)

☑ Display the connection bar when I use the full screen

Use the Colors drop-down list to specify the color depth for the remote session. A lower color depth provides faster response for the remote session.

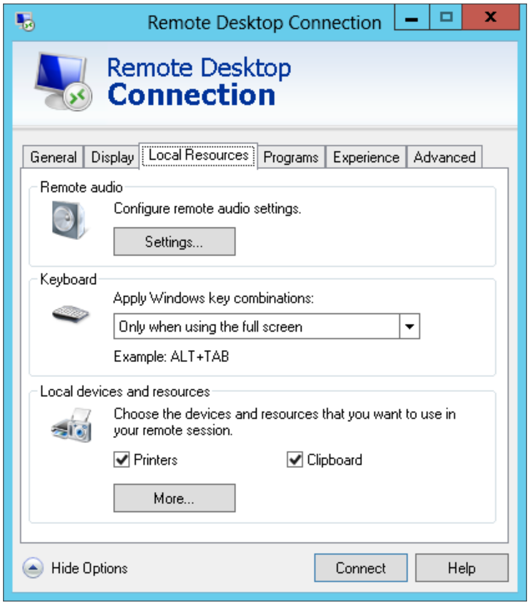
The Display The Connection Bar When I Use The Full Screen option, if enabled, causes Remote Desktop to display a connection bar at the top of the display when the remote session is using full-screen mode. Moving the mouse to the top of the display shows the connection bar, which then enables you to minimize, restore, or close the remote session window.

Local Resources

The settings on the Local Resources tab (shown in Figure 20.13) enable you to configure how Remote Desktop uses local and remote resources. For example, use the Settings button in the Remote Audio group to open a dialog box that enables you to specify whether Remote Desktop plays audio from the remote computer at the remote computer, brings it to your local computer, or does not play the sounds. You can also specify similar settings for remote recording.

FIGURE 20.13

The classic Remote Desktop Connection Local Resources tab


Remote Desktop Connection
Remote Desktop
Connection
General
Display
Local Resources
Programs
Experience
Advanced
Remote audio
Settings...
Keyboard
Local devices and resources
More...
Hide Options
Connect
Help

Configure remote audio settings.

Apply Windows key combinations:

Only when using the full screen

Example: ALT+TAB

Choose the devices and resources that you want to use in your remote session.

☑ Printers ☑ Clipboard

Use the drop-down list in the Keyboard group to specify how Remote Desktop treats Windows key combinations such as Alt+Tab — sending them to the local computer or remote computer, or sending them to the remote computer only when using full-screen mode.

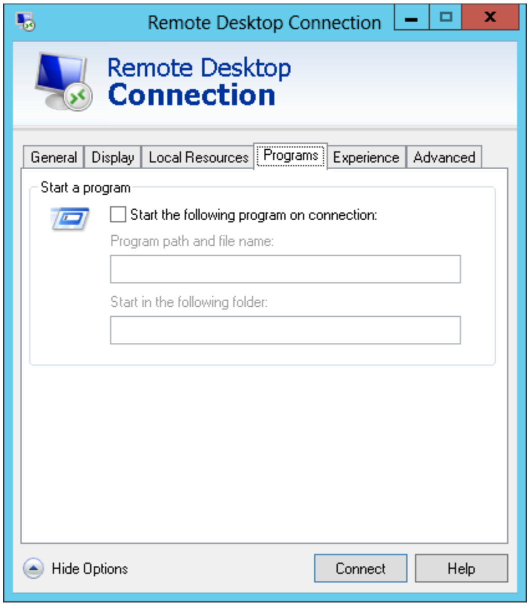
The Local Devices and Resources group lets you specify how local resources such as your printers, Windows Clipboard, ports, disk drives, and other resources are made available during the remote session. This capability can be extremely useful. For example, by enabling the drives on your local computer for the connection, you make them accessible within Computer on the remote computer. This means that you can easily drag and drop files between the two systems. By enabling the Clipboard, you can cut and paste between the systems.

Programs

On the Programs tab (shown in Figure 20.14), you can specify a program to start on the remote computer. Only the program you specify runs on that remote computer. You can exit the session, which closes the program, or you can close the session and leave the remote program running.

FIGURE 20.14

The classic Remote Desktop Connection Programs tab


Remote Desktop Connection
Remote Desktop
Connection
General
Display
Local Resources
Programs
Experience
Advanced
Start a program

☐ Start the following program on connection:

Program path and file name:

Start in the following folder:

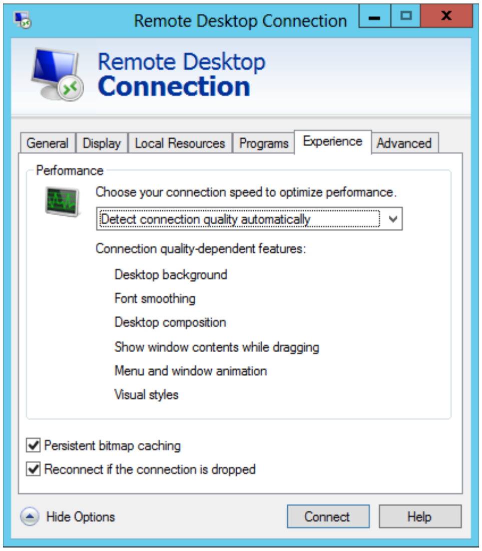
Hide Options
Connect
Help

Experience

The options on the Experience tab (see Figure 20.15) help you control the performance for the remote session. You can choose an option from the drop-down list, which determines which options in the list below the drop-down are enabled. You can also simply select which options you want to use.

FIGURE 20.15

The classic Remote Desktop Connection Experience tab



Performance

Choose your connection speed to optimize performance.

Detect connection quality automatically

Connection quality-dependent features:

Desktop background
Font smoothing
Desktop composition
Show window contents while dragging
Menu and window animation
Visual styles

☑ Persistent bitmap caching
☑ Reconnect if the connection is dropped

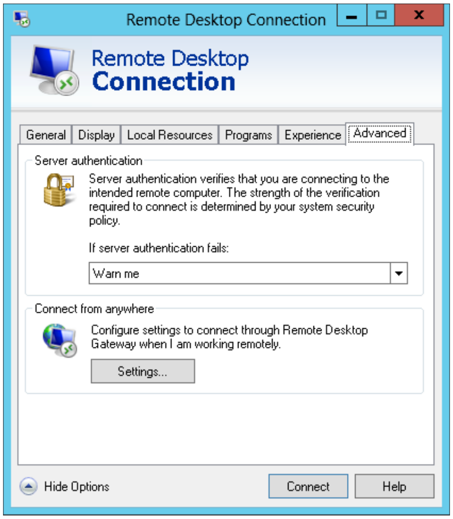
Advanced

The Advanced tab (shown in Figure 20.16) offers options that control authentication alerts and Remote Desktop Gateway. The drop-down list on the Advanced tab lets you specify what action Remote Desktop Connection takes when you connect to a remote computer that doesn't satisfy the security requirements as defined by your local system security policy. You can choose to have Remote Desktop Connection drop the connection, warn you so that you can choose the action to take, or connect without warning you.

The Settings button opens the RD Gateway Server Settings dialog box (see Figure 20.17), which lets you specify how Remote Desktop Connection works with a Terminal Services Gateway Server, now called Remote Desktop Gateway Server. RD Gateway acts essentially as an intermediary between your computer on the Internet and remote computers behind a firewall, such as at your office. RD Gateway uses SSL (port 443) rather than the usual port 3389 used by Remote Desktop connection. RD Gateway therefore makes connecting to remote computers possible without having a VPN or opening port 3389 in the firewall. What's more, it enables connection to multiple back-end computers, rather than just the one that would otherwise be possible with a hole in the firewall for port 3389.

FIGURE 20.16

The classic Remote Desktop Connection Advanced tab


Remote Desktop Connection
Remote Desktop Connection
General
Display
Local Resources
Programs
Experience
Advanced
Server authentication
Connect from anywhere
Settings...
Hide Options
Connect
Help

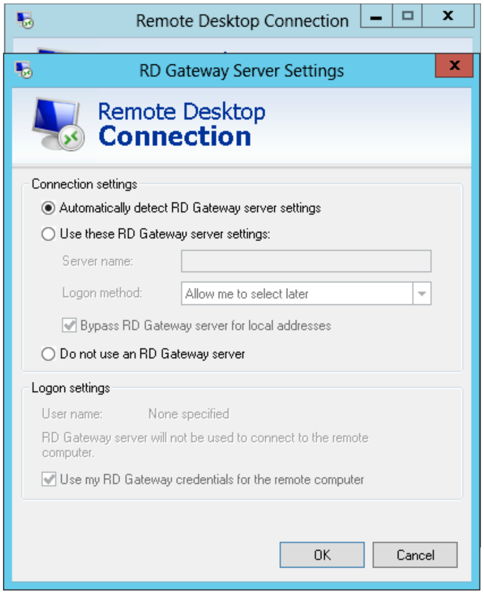
Server authentication verifies that you are connecting to the intended remote computer. The strength of the verification required to connect is determined by your system security policy.

If server authentication fails: Warn me

Configure settings to connect through Remote Desktop Gateway when I am working remotely.

FIGURE 20.17

RD Gateway Server Settings


Remote Desktop Connection
RD Gateway Server Settings
Remote Desktop Connection
Connection settings
Logon settings
OK
Cancel

● Automatically detect RD Gateway server settings

○ Use these RD Gateway server settings:

Server name:

Logon method: Allow me to select later

☑ Bypass RD Gateway server for local addresses

○ Do not use an RD Gateway server

User name: None specified

RD Gateway server will not be used to connect to the remote computer.

☑ Use my RD Gateway credentials for the remote computer

Remote Desktop Connection can detect the RD Gateway server settings automatically, or you can specify them manually. The first two options on the RD Gateway Server Settings dialog box let you specify which method to use. If you choose to specify the settings yourself, you can enter the server name, login method, and whether to bypass the gateway for computers on your local network. If you enter the settings manually, you also have the option of specifying that Remote Desktop Connection will use your RD Gateway credentials to authenticate on the remote computer to which you are connecting.

TIP

In most cases, you can open a remote session in Remote Desktop Connection without changing any options.

Wrap-Up

Remote Assistance and Remote Desktop Connection both provide a means to view and remotely control other computers. Key points of this chapter are:

- If you know a trusted computer expert who can help with your computer, use Remote Assistance to get live help online.
- Some corporations allow employees to connect to a corporate network from home using Remote Desktop Connection.
- If you have a home network and suitable versions of Windows, you can use Remote Desktop to control one PC on the network from another PC in the same network, or from the Internet.

CHAPTER 21

Managing Names and Addresses

IN THIS CHAPTER

Using your Contacts folder

Creating and managing contacts

Creating contact groups

Importing and exporting contacts

You've no doubt seen and tried out the new People app, which lets you integrate your contracts and updates from multiple social network sites such as Windows Live, Facebook, and Twitter. The Mail and Messaging apps rely on the People app for selecting contacts to send e-mail and instant messages. If you haven't tried out the People app, have a look at Chapter 19, "Social Networking with Windows 8."

Windows 8, like Windows 7 before it, offers an alternative you can use from the desktop to manage contacts — the Contacts folder. Each file in that folder is a contact, someone with whom you communicate. It doesn't have to be only people you contact online. You can store anybody's contact information in your Contacts folder. As with pictures, songs, videos, and other documents, each user account has its own Contacts folder. So each person who has a user account can have his or her own collection of names and addresses.

NOTE

Keep in mind that the Windows Contacts folder and the contacts in it are separate from the contacts in your e-mail program. For example, if you opt to download and use Windows Live Mail as your e-mail program, it has its own set of contacts. Although you can import your Windows Contacts into Windows Live Mail, the contacts are not synchronized. So, if you import your Windows Contacts into Windows Live Mail and then make a change to one of your Windows Contacts, that change will not show up in Windows Live Mail because there are actually two separate contacts. Likewise, there is no synchronization between the Contacts folder and the People app.

Why use Windows Contacts? If you are one of the few people who use a computer but don't use e-mail, the Windows Contacts folder provides a place for you to keep your own address book for letters, a phone list, and so on. Or you might use Windows Contacts to store your personal contacts and your e-mail program to store your business contacts. Whatever the case, you can use your Windows Contacts for addressing e-mail, as described later in this chapter.

TIP

The Contacts folder does not offer social networking integration like the People app does. However, if the Mail app is set as your default e-mail program, you can click a contact's e-mail address to open a new e-mail message in Mail addressed to that address. If you use social networking sites, and have previously used the Contacts folder, consider switching to the People app. Unfortunately, there is currently no way to export existing contacts from the Contacts folder and import them into the People app.

Opening Contacts

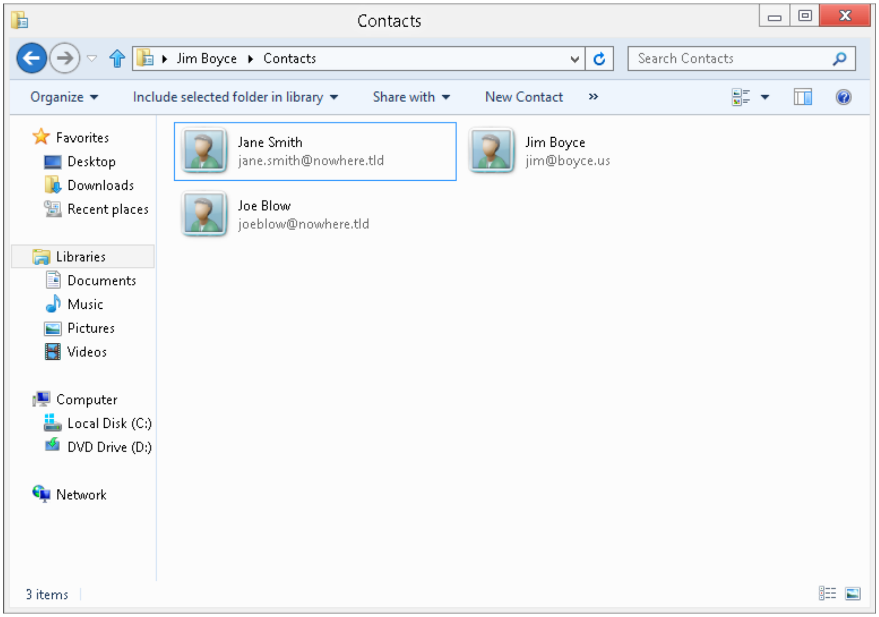
To create or manage contacts, open your Contacts folder using whichever of the following methods is most convenient for you:

- Press ⊞, type **contacts**, and click Windows Contacts in the Apps results.
- If you're already in a folder, click your username in the breadcrumb trail, and then click (or double-click) the Contacts folder icon.

If you've never used your Contacts folder before, it will likely be empty. Figure 21.1 shows a sample Contacts folder with a few contacts already in place.

FIGURE 21.1

Sample Contacts folder


Contacts
Jim Boyce
Contacts
Search Contacts
Organize
Include selected folder in library
Share with
New Contact
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
DVD Drive (D:)
Network
Jane Smith
jane.smith@nowhere.tld
Jim Boyce
jim@boyce.us
Joe Blow
joeblow@nowhere.tld
3 items

Changing how you view contacts

Because Contacts is a folder, you can control how things look using the standard techniques described in Chapter 28, "Managing Files and Folders." For example:

- To show or hide the Preview pane, click Organize and choose Layout ➪ Preview Pane.
- To show or hide the Navigation pane, click Organize and choose Layout ➪ Navigation Pane.
- To show or hide the menu bar, press the Alt key or click Organize and choose Layout ➪ Menu Bar.
- To change the size of icons, click the arrow next to the Change Your View button and choose an icon size, or hold down the Ctrl key while spinning your mouse wheel.
- To sort or group contacts in Details view, point to any column heading and click the arrow that appears.

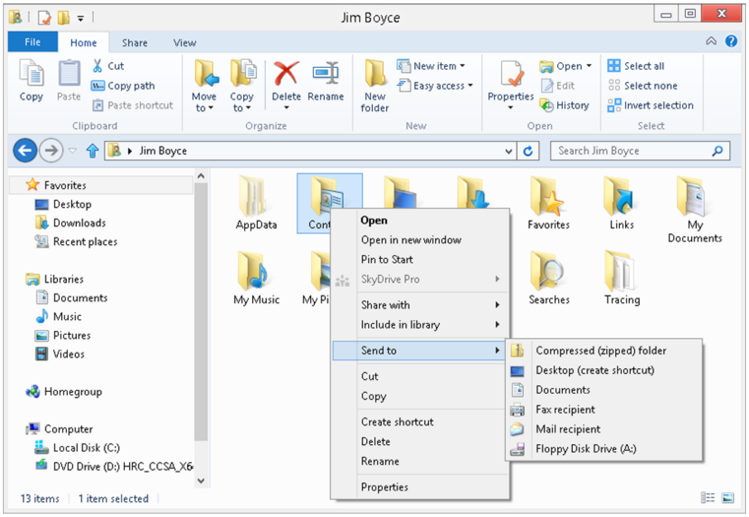
Making shortcuts to contacts

Before we go any further with Contacts, let us point out some easy ways to create shortcuts to your Contacts folder. These make opening the folder in the future easier. You don't have to create any of these shortcuts, of course. They're entirely optional. But if you use your Contacts folder often, you'll probably find them handy.

First, click your username in the breadcrumb menu so that you're in the main folder for your user account. Right-click the Contacts icon, as shown in Figure 21.2, and choose Send To ➪ Desktop (Create Shortcut). Then, drag the shortcut from the desktop to the taskbar and release it to pin it to the taskbar.

FIGURE 21.2

Right-click Contacts.


Jim Boyce
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Select all
Select none
Invert selection
Select
Jim Boyce
Search Jim Boyce
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD Drive (D:) HRC_CCSA_X6
13 items
1 item selected
AppData
Cont
Favorites
Links
My Documents
My Music
My Pi
Searches
Tracing
Open
Open in new window
Pin to Start
SkyDrive Pro
Share with
Include in library
Send to
Cut
Copy
Create shortcut
Delete
Rename
Properties
Compressed (zipped) folder
Desktop (create shortcut)
Documents
Fax recipient
Mail recipient
Floppy Disk Drive (A:)

TIP

Here's an easy way to open your user folder to get at your Contacts. Open Windows Explorer from the taskbar. In the Address bar, click the arrow to the left of the word Libraries. Then, click your username in the resulting drop-down menu. You'll see your Contacts folder, along with the other folders that are part of your profile.

To add a shortcut to the Favorites pane in the Navigation bar, open your user folder and drag the Contacts folder into the Favorites box.

Creating a contact

Creating a contact is simple. First open your Contacts folder if you haven't already. Then click the New Contact toolbar button, or right-click some empty space in your Contacts folder (not on an icon) and choose New ➪ Contact.

An empty, fill-in-the-blanks form opens. (The blanks are called *fields*.) It's divided into multiple tabs. You don't have to fill in everything for a contact. Fill in only as much information as you need or want for the contact. Here are some tips for filling in a contact:

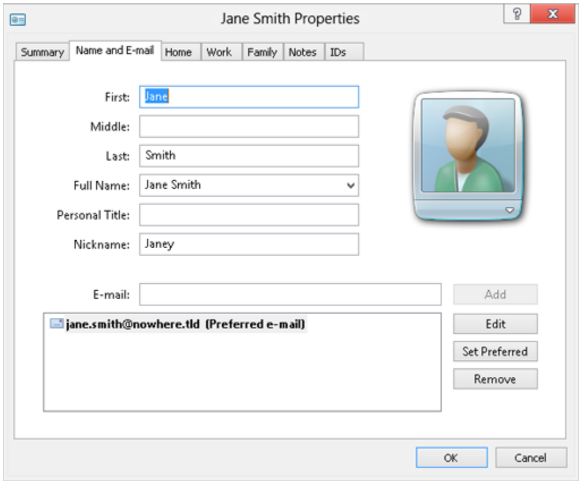
- After filling in a field, press the Tab key to move to the next one, or click the next blank you want to fill.
- After filling in the first and last names, click the Full Name drop-down button to choose how you want the name displayed for alphabetizing.
- To add an e-mail address, type it into the E-mail text box and click Add. If the contact has several e-mail addresses, repeat the process to add each one. Then click the e-mail address you use most often for that person and click Set Preferred.
- To add a picture, click the picture box and choose Change Picture. Then, navigate to the folder that contains the picture you want to add and click (or double-click) the desired picture. The picture becomes the contact's icon in the Contacts folder.
- If this is a personal contact, use the Home tab to fill in the person's home address.
- Use the Work tab to fill in the work address and other information.
- Use the Family tab to fill in personal information such as birthday, anniversary, spouse, children, and so forth.
- Use the Notes tab to fill in any miscellaneous information you desire.
- The IDs tab shouldn't require any intervention on your part. It gets filled in automatically when you receive a digitally signed message from the person.
- When you've finished entering the contact, click OK.

Opening and editing contacts

To open a contact, double-click its icon (unless you're using single-clicks, in which case you just have to click it once). You see a Name And E-Mail tab that contains name, e-mail, and other basic information, as in the example in Figure 21.3.

FIGURE 21.3

Name And E-Mail tab of a sample contact



First: Jane
Middle:
Last: Smith
Full Name: Jane Smith
Personal Title:
Nickname: Janey
E-mail:
jane.smith@nowhere.tld (Preferred e-mail)

While viewing a contact's information on the Summary tab, you can do any of the following:

- To send the person an e-mail, click the e-mail address.
- To visit that person's website (if any), click the URL.
- To add, remove, or change the picture, click the Name And E-mail tab, click the picture, and click either Change Picture or Remove Picture.
- To see or change any other information, click the appropriate tab.

NOTE

Each contact you create in your Contacts file is stored as a `.contact` file. The extension, however, is visible only if you deselect the Hide Extensions For Known File Types check box on the View tab in the Folder Options dialog box.

Tips for Contact Pictures

For best results, you'll want to create copies of pictures appropriately sized and cropped for contacts. You might want to create a subfolder, perhaps named Contact Pix, in your Pictures folder just for those pictures. That will make them easy to find.

If you want to use a photo you took with a digital camera, start with a copy of the photo so that you don't compromise the original. Try to crop out a perfect square around the person's face. Then size that cropped image to about 250 × 250 pixels. Save it in BMP, JPEG, TIFF, or PNG format. If you're using a logo or icon rather than a photo, you can use the GIF or ICO extension. For picture-editing tools and techniques, see Chapter 23, "Working with Pictures."

Create a "Me" contact

It's a good idea to create a contact for yourself, filling in as much information as you want to share with others. You can e-mail that contact to folks so that they don't have to type your contact information themselves. After you create a contact for yourself, right-click its icon and choose Set As My Contact. The menu option then changes to This Is Me. You can click This Is Me to direct Windows to use your Windows user account picture for the contact or to change the picture in the contact to your current Windows user account picture.

TIP

To use a different contact as your own, simply create the contact, right-click it, and choose This Is Me.

If you want to e-mail your contact information to others who aren't using Windows 7 or Windows 8, attach a `.vcf` file to an e-mail message. To do that, right-click your Contact icon and choose Send Contact. A new message window opens with the card already attached as a `.vcf` file. Fill in the To and Subject lines. Fill in the body of the message informing the recipient that your contact information is attached.

TIP

Contact groups make sending and forwarding messages to multiple recipients easy.

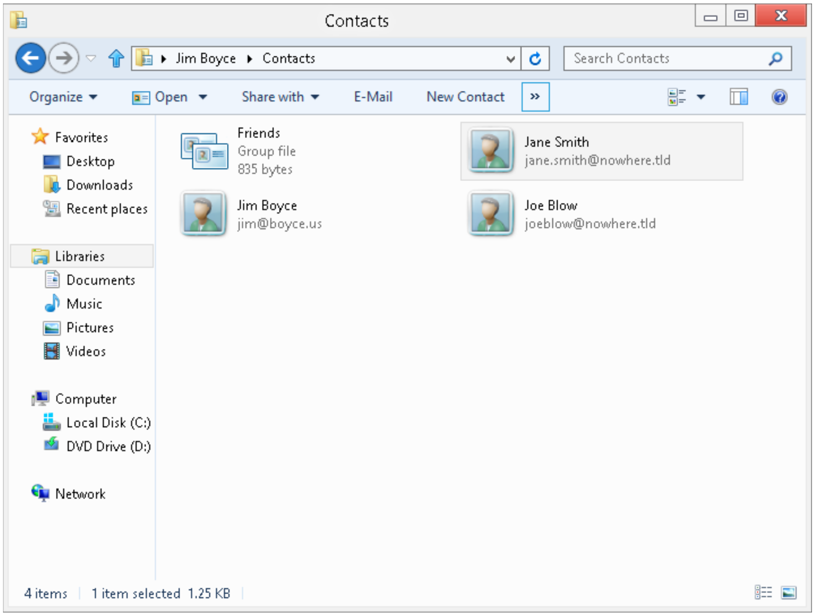
Creating Contact Groups

A contact group is any collection of contacts that have something in common. It could be people who go to the same church as you, members of the same club, work colleagues, or just pals. You might also think of a contact group as a mailing list (or distribution list). The beauty of a contact group is that you can send or forward an e-mail message to everyone in the group in one fell swoop.

Visually, a contact group is just a collection of contact names. For example, Figure 21.4 shows a contact group named Friends.

FIGURE 21.4

Sample contact group


Contacts
Jim Boyce
Contacts
Search Contacts
Organize
Open
Share with
E-Mail
New Contact
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
DVD Drive (D:)
Network
Friends
Group file
835 bytes
Jane Smith
jane.smith@nowhere.tld
Jim Boyce
jim@boyce.us
Joe Blow
joeblow@nowhere.tld
4 items
1 item selected 1.25 KB

To create a contact group in your Contacts folder:

1. Click the New Contact Group toolbar button.
2. In the Group Name box, enter any name that describes the group.
3. Add members using any of the following methods:
   - To add existing contacts, click Add To Contact Group. Click the first person who should be in the group. Then hold down the Ctrl key as you click everyone else who belongs in the group. Then click Add.
   - To add a new person to the group as well as create a contact for that person, click Create New Contact. Fill in contact information for that person and click OK.
   - To add a person's name and e-mail address without creating a contact icon for that person, fill in the Contact Name and E-mail boxes near the bottom of the window and click Create For Group Only.

4. Optionally, click the Contact Group Details tab and fill in details about the group. For example, if you're all members of the same club or church, you can add address and phone information for the building where you meet.
5. Click OK.

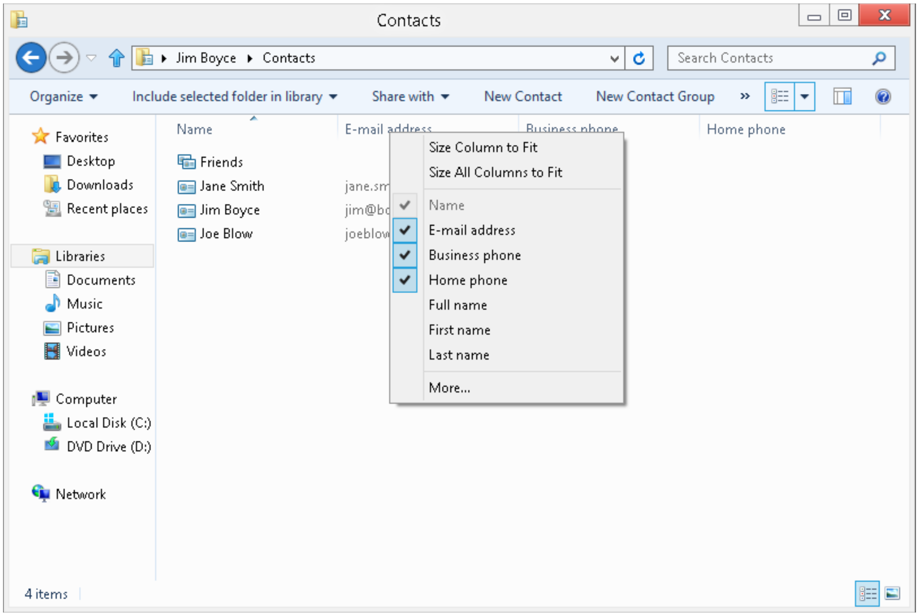
The group window closes and appears as an icon in the Contacts folder. You can use and treat the group in much the same way as you do an individual contact:

- To send an e-mail to the group, right-click the group icon and choose Action ➪ Send E-mail.
- To change the group, double-click the group's icon in Contacts.
- To delete the group, right-click its icon and choose Delete. Contacts within the group will remain. Only the group icon and noncontacts are deleted.

Don't forget that you have much leeway in how you view the contents of folders. For example, to view and organize your contacts as a list or table, choose Details from the Views menu. To choose columns to display, right-click any column heading, as shown in Figure 21.5. If the drop-down menu doesn't show a column you want to include, click More for a more complete list.

FIGURE 21.5

Choose columns to display.


Contacts
Jim Boyce
Contacts
Search Contacts
Organize
Include selected folder in library
Share with
New Contact
New Contact Group
»
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Computer
Local Disk (C:)
DVD Drive (D:)
Network
Name
E-mail address
Business phone
Home phone
Friends
Jane Smith
Jim Boyce
Joe Blow
jane.sm
jim@bo
joeblow
Size Column to Fit
Size All Columns to Fit
✓ Name
✓ E-mail address
✓ Business phone
✓ Home phone
Full name
First name
Last name
More...
4 items

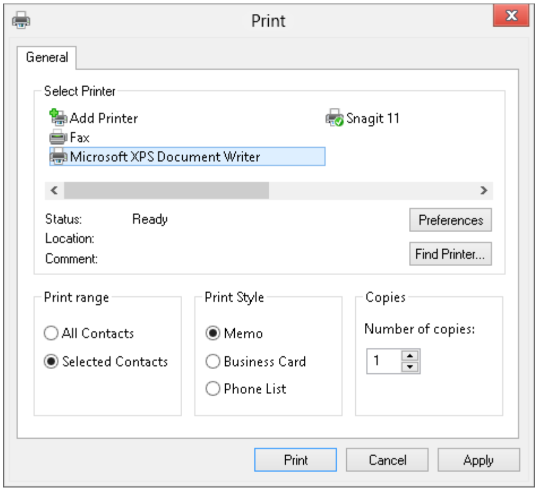
After you've selected the columns you want to view, you can arrange them however you like. Just drag any column heading left or right to place it where it's easy to see. You can sort, group, and filter contacts as you would files in any folder. For more information on how that works, see Chapters 27–30.

Printing Contacts

Printing contact information is easy. If you want to print only certain contacts, select their icons using any of the standard techniques, such as Ctrl+click. Then click the Print toolbar button. If that button isn't visible, click >> at the end of the toolbar and then click Print. The Print dialog box opens, looking something like the example in Figure 21.6.

FIGURE 21.6

Print options for contacts



Status: Ready
Location:
Comment:

Print range
○ All Contacts
● Selected Contacts

Print Style
● Memo
○ Business Card
○ Phone List

Copies
Number of copies: 1

To print all contacts, choose All Contacts under Print Range. To print only selected contacts, choose Selected Contacts. Then choose a print format:

- **Memo:** Prints most business and address contact information
- **Business Card:** Prints business, address, and phone information
- **Phone List:** Prints phone numbers

If you have multiple printers, click the one you want to print with. Then click the Print button.

If none of the available print formats fits what you need, you can export contacts to a file. Then import those contacts into some other program that gives you the flexibility you need to print as you see fit.

Importing and Exporting Contacts

Importing allows you to copy contacts from external programs into your Contacts folder. Exporting lets you copy contacts to another program or a format that's compatible with an outside program. We start this section with importing.

Importing people to your contacts folder

You can import names and addresses from the following formats into your Windows Contacts folder:

- **CSV (Comma-Separated Values):** This is a generic format to which many programs can export data. You start in the other program by exporting names and addresses to a CSV file. Then you open your Contacts folder and import the CSV file you created from the original program.
- **LDIF (LDAP server):** Use this format to import contacts from a directory server that uses Lightweight Directory Access Protocol (LDAP).
- **vCard (VCF file):** This format is used by many programs to store virtual business card data. In contrast to other options described here, you might use this format to import a single contact whose data is stored in a `.vcf` file.
- **WAB (Windows Address Book):** This format imports contacts from the `.wab` file used by Windows Address Book and Outlook Express in earlier versions of Windows. Typically, you find that file in the `x:\Documents and Settings\UserName\Application Data\Microsoft\Address Book` folder, where *x* is the disk drive and `UserName` is the name of the user account.

If the data you want to import isn't already in one of these formats, open the program that you normally use to manage those contacts. Then search its Help for "export" to see whether you can export to CSV or another compatible format.

When the data you want to import are in an appropriate format and you know the location of the file, follow these steps to import the data to your Contacts folder:

1. Open Windows Contacts.

TIP

If you plan to import from Application Data or another hidden folder, click the Organize button and choose Folder And Search Options. Click the View tab and then click Show Hidden Files, Folders, And Drives ➪ OK. Doing so ensures that all folders and files are visible in the steps to follow.

2. Click the Import toolbar button.
3. Click the format in which the data to be imported are stored; then click Import.

4. Navigate to the drive and folder in which the data to be imported are stored; then click (or double-click) the file to import. Click Next.
5. If importing from a CSV file, in the CSV Import dialog box, verify the field mapping to use for the import. To change a field, click the field, click Change Mapping, choose the field you want to map to, and click OK.
6. When you are satisfied with the mapping, click Finish.

You should see an icon for each imported contact.

Exporting contacts to vCards

Many programs store contact information in virtual business cards, where each contact is a file with a `.vcf` extension. Before you get started, you might want to create a folder to store the exported data. That way, all the exported contacts will be together in a single folder.

To export contacts in vCard format:

1. Open Windows Contacts.
2. Click the Export toolbar button.
3. Click vCards (folder of `.vcf` files).
4. Click Export.
5. Navigate to the folder in which you want to place the exported vCards.
6. Click OK.
7. When the export is complete, click OK.

To verify the export, open the folder to which you exported. You should see an icon for each exported contact. The contacts won't show any pictures because the vCard format doesn't support the use of pictures.

Exporting to a CSV file

You can export contacts to a single Comma-Separated Values (CSV) file for later import to another program. For example, after exporting contacts to a CSV file, you can open them in Excel, import them to a Microsoft Access table, or use them for a Microsoft Word mail merge. With Word and Access, you can print form letters, mailing labels, and envelopes from the CSV file.

To export contacts to a CSV file, open Windows Contacts as you normally would. Then:

1. Click the Export toolbar button.
2. Click CSV (Comma-Separated Values) ➪ Export.

3. Type a name for the exported file. Or click the Browse button, navigate to the folder in which you want to store the file, enter a filename, and click Save.
4. Click Next.
5. Select (check) the fields you want to export and click Finish.
6. Click OK when the export is complete.

To verify that export, open the folder to which you exported the file. To view the contents of the file using Notepad, right-click its icon and choose Open With ➪ Notepad. That will show you the file in its raw form. But in actual practice, you'll likely import it into whatever program you want to use.

Searching for Contacts

If you have a lot of contacts in your Contacts folder, you can use the Search Contacts box in the upper-right corner of the Contacts window to quickly locate a contact. Click in the Search Contacts box and type a few characters from the person's name. The contact list shrinks to contain only the people whose names contain those letters, and highlights the search text in the contact information (such as name or e-mail address). When you see the person you want, double-click the name to open. To remove the filter and see all contacts again, click the x at the right side of the Search Contacts box.

Sharing Contacts on a Network

If your computer is part of a network, you can share a contact with other Windows 7 or Windows 8 computers in that network. The process is the same as that for sharing any other file. Right-click the contact and choose Share With. Choose the people with whom you want to share, and set permission levels. For more information, see Chapter 49, "Creating a Home Network," and Chapter 50, "Sharing Resources on a Network."

Wrap-Up

Names and addresses are easy to manage in Windows 8, thanks to the Contacts folder. Here's a summary of all the things you can do:

- To view contacts, open your Contacts folder.
- To create shortcuts to your Contacts folder, first open Windows Explorer. Click the arrow to the left of Libraries in the breadcrumb and choose your username. Then drag the Contacts folder to the Favorites branch in the Navigation pane, or to the desktop, depending on where you want to place shortcuts.

- To create a new contact, click the New Contact toolbar button in your Contacts folder.
- To open or change a contact's information, open the contact icon.
- To identify a contact as yourself, right-click your own contact icon and choose Set As My Contact.
- To create a mailing list, click New Contact Group in the toolbar.
- To send an e-mail to a contact group, right-click the group icon and choose Action ➪ Send E-mail. Or from a new message or forwarded message, click To in the address field and choose the group as the recipient.
- To print contacts, click the Print toolbar button.
- Click Import or Export on the toolbar to import contacts from an external source, or copy contacts to an external file.
- To quickly find a contact without opening your Contacts folder, type a few characters of the name in the Search Contacts box.

CHAPTER 22

Working in the Cloud

IN THIS CHAPTER

- Understanding the cloud
- Accessing SkyDrive files
- Using SkyDrive for Windows
- Using the SkyDrive app

In 2005, Microsoft introduced an online web portal for users to store files, get their e-mail, communicate with other users, and share files. This web portal is collectively known as Windows Live and is discussed in more detail in Chapter 18. In this chapter, however, you learn about working in the cloud with Microsoft SkyDrive, an online file sharing and file storage tool.

Microsoft SkyDrive provides an area online for you to store and share photos, presentations, and other files. With Windows 8, a new app is available to help you manage and add files to SkyDrive. You also can download another application (called SkyDrive for Windows) that provides syncing of files between SkyDrive and your Windows 8 computer. This chapter shows you how to use the SkyDrive app and the SkyDrive for Windows syncing application.

Understanding the Cloud

Computer users have been limited in the way in which they can access files on disparate systems. Traditionally, users store their files on a local hard drive (such as the C: drive) or on a network drive at work. To use those files on a different computer, that computer must have a network connection to that user's network drive, or the user must transfer files using a removable drive such as a floppy drive, flash drive, or similar.

With *cloud technology*, the user just has to have access to the Internet in order to work on files. Microsoft SkyDrive is Microsoft's cloud-based technology that provides access to users' files from any location at any time. The advantage with cloud technologies is that you are not limited to a company network location or to a removable drive strategy. Storing files in the cloud also provides a more flexible way for users to share files with other users. You no longer have to rely on the network administrator in your organization to establish shares for your teams, colleagues, or other persons whom you might want to share files with.

NOTE

As with most systems, there are some disadvantages to working with cloud-based systems. For one, you must have an Internet connection to access files. Second, your company may have guidelines against storing files in a cloud-based system because of confidentiality and/or file security regulations. Finally, your files may be subject to terms and conditions imposed by the cloud company that gives it (the cloud company) rights to read and access your files. Currently, Microsoft SkyDrive does not indicate that it has those rights, but you should be aware that as you decide to store your photos, documents, videos, and other items in the cloud.

Microsoft has a vision that every user should have access to his or her files anytime and anywhere (with Internet connectivity of course) they want them. In addition, not only should users have access to them at any time and any location, the device you use to access them should be irrelevant. Users should, for example, be able to access files using a personal computer, a tablet device with Wi-Fi connectivity, a Smart phone, or a laptop. In fact, with Microsoft SkyDrive, users who have an Apple iPhone, iPad, or iPod touch, or a Google Android-based tablet or smart phone (using a non-Microsoft SkyDrive app), can access SkyDrive files as well.

In addition to Microsoft SkyDrive, other cloud-based file-storage services do exist. This chapter focuses on Microsoft SkyDrive, but you are welcome to learn more about other services to see which is best for you and/or your organization. The following are a few of the most popular online storage services:

- Google Drive — `http://drive.google.com/`
- Sugar Sync — `http://www.sugarsync.com/`
- DropBox — `http://www.dropbox.com/`
- Box — `http://www.box.com/`
- InSync — `https://www.insynchq.com/`
- Cubby — `http://www.cubby.com/`

Setting Up a SkyDrive Account

SkyDrive has been available for users in the Microsoft Live family of products for several years. With SkyDrive, you can store many types of files online, including word processing documents, spreadsheets, text files, photos, presentations, and videos.

To begin using SkyDrive, you need a Windows Live account. This chapter assumes you have a Windows Live account. To ensure you can start using SkyDrive, read Chapter 18 to see how to set up an account and to ensure you can log into Windows Live.

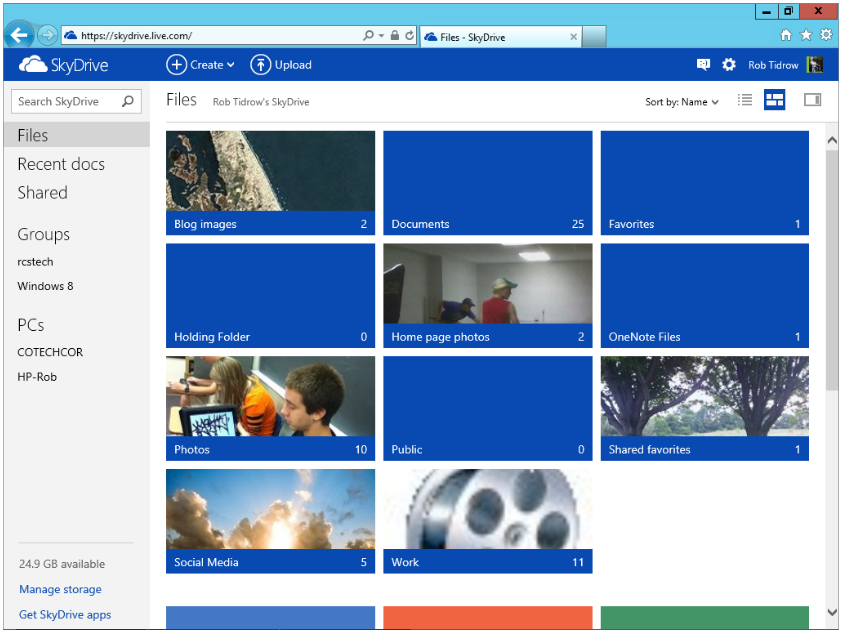
Accessing SkyDrive Files

With Windows 8, you have three primary ways to access files stored in your SkyDrive environment:

- **Web-based:** You can navigate to Windows Live from Microsoft Internet Explorer and access files from the SkyDrive menu. Figure 22.1 shows an example of this approach. You can also navigate to `http://SkyDrive.live.com`, which will automatically re-route you to the Window Live website.

FIGURE 22.1

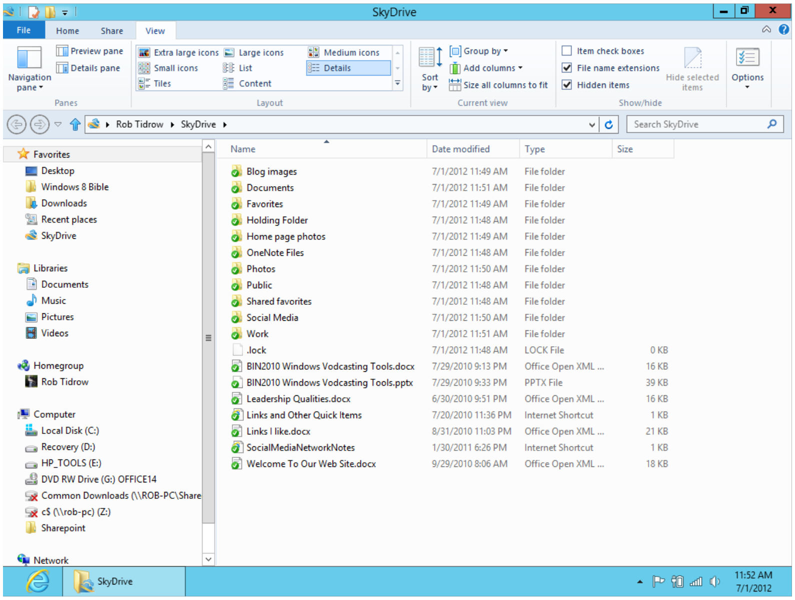
You can access SkyDrive using a web browser, such as Internet Explorer.


https://skydrive.live.com/
Files - SkyDrive
SkyDrive
Create
Upload
Rob Tidrow
Search SkyDrive
Files
Rob Tidrow's SkyDrive
Sort by: Name
Files
Recent docs
Shared
Groups
rcstech
Windows 8
PCs
COTECHCOR
HP-Rob
24.9 GB available
Manage storage
Get SkyDrive apps
Blog images 2
Documents 25
Favorites 1
Holding Folder 0
Home page photos 2
OneNote Files 1
Photos 10
Public 0
Shared favorites 1
Social Media 5
Work 11

- **SkyDrive for Windows:** This is an application that you download from Microsoft that enables you to access and sync files with your SkyDrive account. Figure 22.2 shows this tool. SkyDrive for Windows creates a new folder on your computer called SkyDrive. Files and folders you add to the SkyDrive folder are automatically synced between your computer and your SkyDrive account.
- **SkyDrive Windows 8 app:** The app uses the Windows 8 app interface to let you view, manage, and add files to your SkyDrive account. The Windows 8 app also provides some sharing between some other Windows 8 apps, such as the Photos app and Peoples app. The app is shown in Figure 22.3.

FIGURE 22.2

You can access SkyDrive using the SkyDrive for Windows software program.

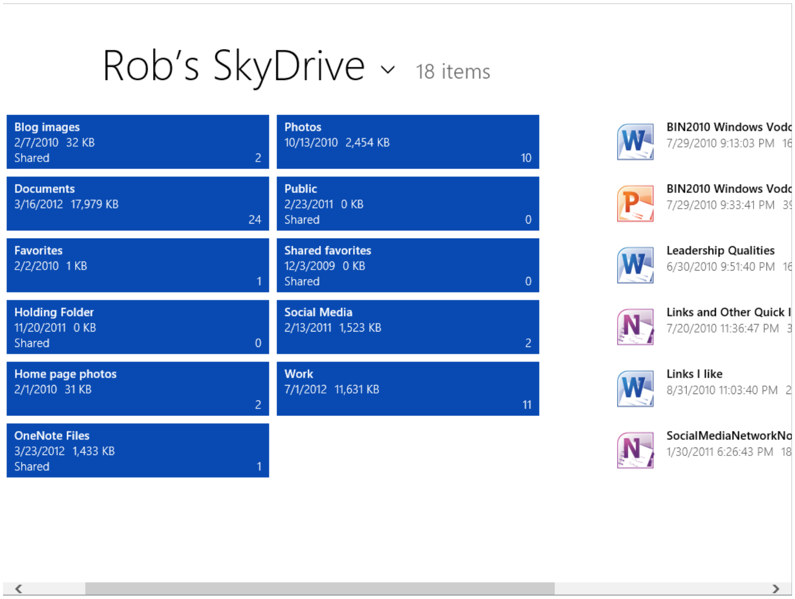

SkyDrive
File
Home
Share
View
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Tiles
Content
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Hide selected items
Options
Show/hide
Rob Tidrow
SkyDrive
Search SkyDrive
Favorites
Desktop
Windows 8 Bible
Downloads
Recent places
SkyDrive
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
DVD RW Drive (G:) OFFICE14
Common Downloads (\\ROB-PC\Share
c$ (\\rob-pc) (Z:)
Sharepoint
Network
SkyDrive
11:52 AM
7/1/2012

☐ Item check boxes
☑ File name extensions
☑ Hidden items

Name	Date modified	Type	Size
Blog images	7/1/2012 11:49 AM	File folder	
Documents	7/1/2012 11:51 AM	File folder	
Favorites	7/1/2012 11:49 AM	File folder	
Holding Folder	7/1/2012 11:48 AM	File folder	
Home page photos	7/1/2012 11:49 AM	File folder	
OneNote Files	7/1/2012 11:48 AM	File folder	
Photos	7/1/2012 11:50 AM	File folder	
Public	7/1/2012 11:48 AM	File folder	
Shared favorites	7/1/2012 11:48 AM	File folder	
Social Media	7/1/2012 11:50 AM	File folder	
Work	7/1/2012 11:51 AM	File folder	
.lock	7/1/2012 11:48 AM	LOCK File	0 KB
BIN2010 Windows Vodcasting Tools.docx	7/29/2010 9:13 PM	Office Open XML ...	16 KB
BIN2010 Windows Vodcasting Tools.pptx	7/29/2010 9:33 PM	PPTX File	39 KB
Leadership Qualities.docx	6/30/2010 9:51 PM	Office Open XML ...	16 KB
Links and Other Quick Items	7/20/2010 11:36 PM	Internet Shortcut	1 KB
Links I like.docx	8/31/2010 11:03 PM	Office Open XML ...	21 KB
SocialMediaNetworkNotes	1/30/2011 6:26 PM	Internet Shortcut	1 KB
Welcome To Our Web Site.docx	9/29/2010 8:06 AM	Office Open XML ...	18 KB

FIGURE 22.3

You can access SkyDrive using the Microsoft SkyDrive app.



Rob's SkyDrive 18 items

Blog images
2/7/2010 32 KB
Shared 2

Photos
10/13/2010 2,454 KB
10

Documents
3/16/2012 17,979 KB
24

Public
2/23/2011 0 KB
Shared 0

Favorites
2/2/2010 1 KB
1

Shared favorites
12/3/2009 0 KB
Shared 0

Holding Folder
11/20/2011 0 KB
Shared 0

Social Media
2/13/2011 1,523 KB
2

Home page photos
2/1/2010 31 KB
2

Work
7/1/2012 11,631 KB
11

OneNote Files
3/23/2012 1,433 KB
Shared 1

BIN2010 Windows Vodc
7/29/2010 9:13:03 PM 16

BIN2010 Windows Vodc
7/29/2010 9:33:41 PM 3

Leadership Qualities
6/30/2010 9:51:40 PM 16

Links and Other Quick I
7/20/2010 11:36:47 PM 1

Links I like
8/31/2010 11:03:40 PM 2

SocialMediaNetworkNo
1/30/2011 6:26:43 PM 18

Using SkyDrive for Windows

As you've read, SkyDrive for Windows is a separate application that creates a new SkyDrive folder on your computer. Files and folders you put into your SkyDrive folder get synced with the SkyDrive (Windows Live) web portal and will sync with other devices that are running SkyDrive apps.

TIP

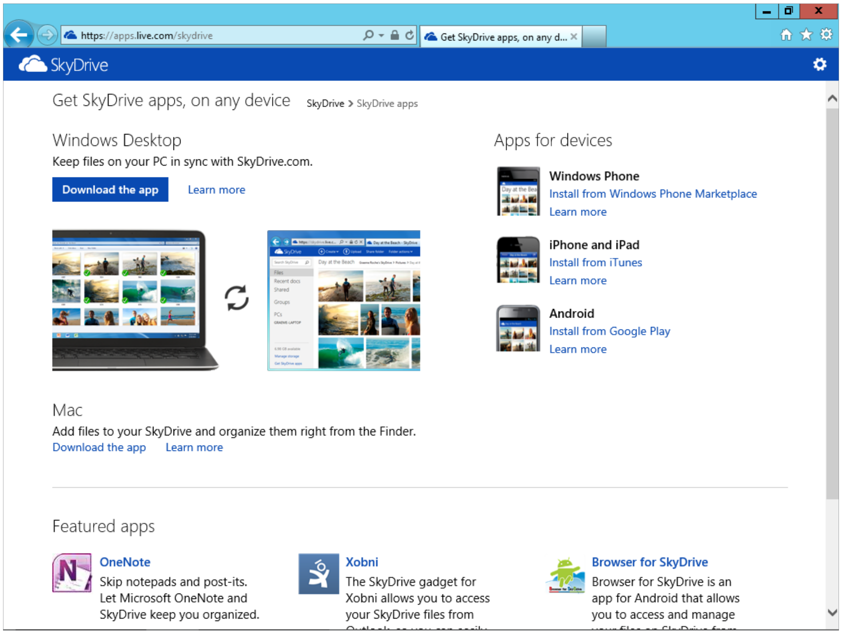
If you have an Apple iPad or iPod Touch, consider downloading the free SkyDrive app from the Apple iTunes Store. The SkyDrive app enables you to view your SkyDrive files, delete them, move them to different folders, add folders, send photos or videos to SkyDrive, and open files (if you have a support app for that file type).

To start using SkyDrive for Windows, you must first download it and install it on your computer. The following steps show you how to do this:

1. Open Internet Explorer and visit `https://apps.live.com/skydrive`.
2. On the Microsoft SkyDrive web page, click Download the App and click the Run button to download (see Figure 22.4) and install SkyDrive for Windows.
3. When installed, the Welcome To SkyDrive dialog box appears (see Figure 22.5). Click Get Started.
4. At the Sign In page, enter your Windows Live ID and your Live password if prompted for them.
5. Click Sign In. A new SkyDrive folder is created in your user's folder. For example, Rob's SkyDrive folder's path is `C:\Users\Rob\SkyDrive`. You can change that location by clicking Change and selecting the folder in which you want to store the SkyDrive folder. Click OK after you select a folder.
6. Click Next to continue.
7. Click Done. Figure 22.2 (shown earlier in this chapter) shows the new SkyDrive folder in the Favorites listing in the Navigation pane.

FIGURE 22.4

Download the SkyDrive For Windows application by first clicking Download the App button.



https://apps.live.com/skydrive

Get SkyDrive apps, on any d...

SkyDrive

Get SkyDrive apps, on any device SkyDrive > SkyDrive apps

Windows Desktop

Keep files on your PC in sync with SkyDrive.com.

Download the app Learn more

Apps for devices

Windows Phone
Install from Windows Phone Marketplace
Learn more

iPhone and iPad
Install from iTunes
Learn more

Android
Install from Google Play
Learn more

Mac

Add files to your SkyDrive and organize them right from the Finder.

Download the app Learn more

Featured apps

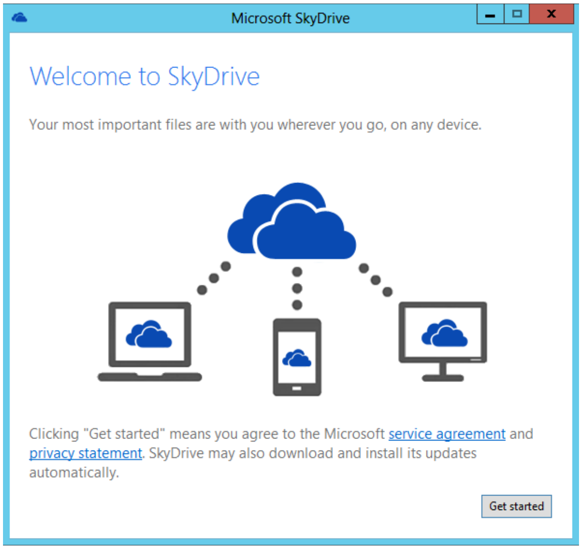
OneNote
Skip notepads and post-its. Let Microsoft OneNote and SkyDrive keep you organized.

Xobni
The SkyDrive gadget for Xobni allows you to access your SkyDrive files from

Browser for SkyDrive
Browser for SkyDrive is an app for Android that allows you to access and manage

FIGURE 22.5

The Welcome To SkyDrive for Windows dialog box



Microsoft SkyDrive

Welcome to SkyDrive

Your most important files are with you wherever you go, on any device.

Clicking "Get started" means you agree to the Microsoft service agreement and privacy statement. SkyDrive may also download and install its updates automatically.

Get started

After you install SkyDrive for Windows, SkyDrive automatically syncs your online files with those on your computer. Depending on the number and size of your files, this might take several minutes. Eventually, the SkyDrive folder on your computer should match the files and folders listed when you view SkyDrive or Windows Live.

The following section describes the use of the SkyDrive app.

Using the SkyDrive App

The SkyDrive app provides some of the capabilities of the SkyDrive for Windows desktop application but does have some limitations. It is available on the Windows Start screen. Click it now to start using it.

TIP

If for some reason the SkyDrive app is not on your Start screen, you can reinstall it by visiting the Windows Store to download it. Chapter 37 describes how to use the Windows Store to locate, download, and install Windows 8 apps.

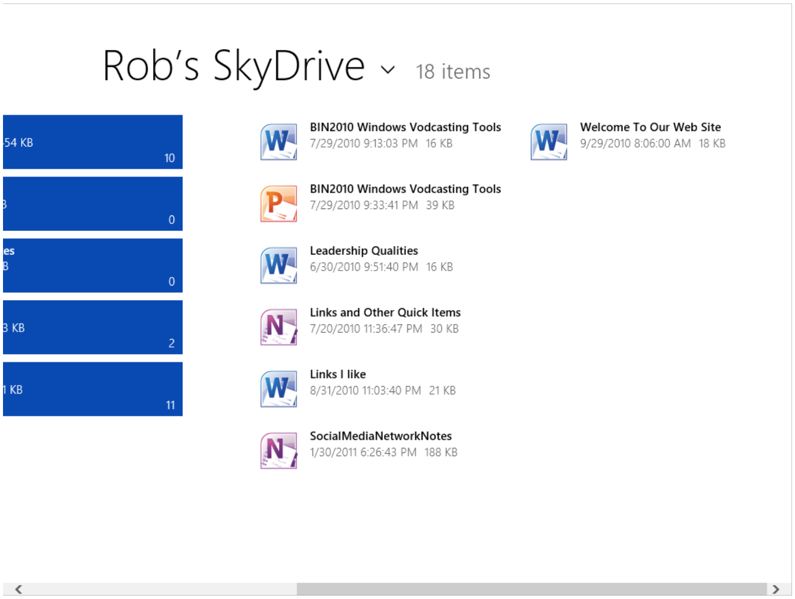
When the app first appears, you are prompted to enter your Microsoft Live login credentials. Do so now to continue with the initial setup process. Figure 22.3 earlier in the chapter shows an example of what Rob's folders and files look like in the SkyDrive app.

You can view SkyDrive items in one of two ways in the SkyDrive app. To access the view controls, right-click to open the SkyDrive toolbar at the bottom of the screen. You can click one of the following options to change the view:

- **Details:** Displays filename, modification date and time, and file size of each file. Figure 22.6 shows files in the SkyDrive view using the Details view.
- **Thumbnails:** Shows each file as a thumbnail icon. Figure 22.7, for example, shows the SkyDrive in thumbnail view.

FIGURE 22.6

SkyDrive app in Details view



Rob's SkyDrive 18 items

BIN2010 Windows Vodcasting Tools
7/29/2010 9:13:03 PM 16 KB

Welcome To Our Web Site
9/29/2010 8:06:00 AM 18 KB

BIN2010 Windows Vodcasting Tools
7/29/2010 9:33:41 PM 39 KB

Leadership Qualities
6/30/2010 9:51:40 PM 16 KB

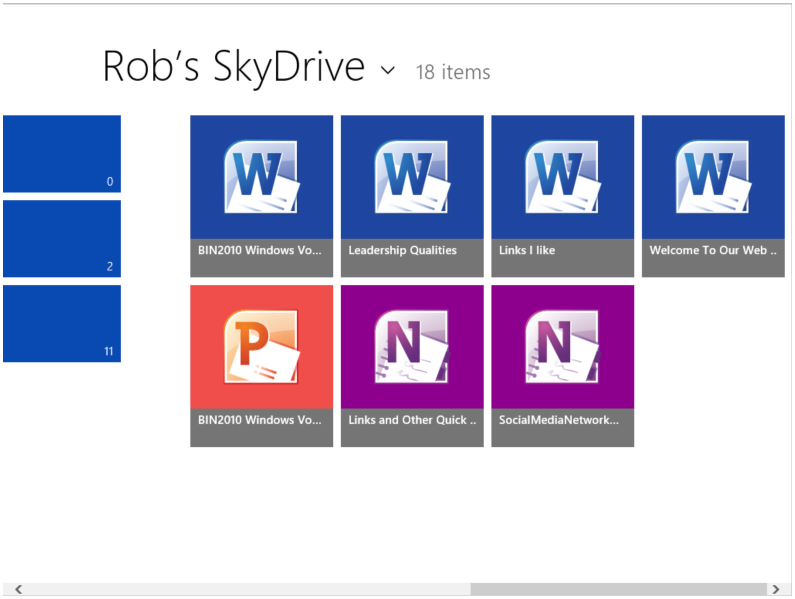
Links and Other Quick Items
7/20/2010 11:36:47 PM 30 KB

Links I like
8/31/2010 11:03:40 PM 21 KB

SocialMediaNetworkNotes
1/30/2011 6:26:43 PM 188 KB

FIGURE 22.7

SkyDrive app in Thumbnails view



Rob's SkyDrive 18 items

BIN2010 Windows Vo...
Leadership Qualities
Links I like
Welcome To Our Web ..
BIN2010 Windows Vo...
Links and Other Quick ..
SocialMediaNetwork...

Adding files to SkyDrive

One of the tasks that you can perform with the SkyDrive app is to add files to your SkyDrive folders. You can add files from your computer to SkyDrive by using the following steps:

1. From the SkyDrive app, click the folder in which you want to add a file.
2. Right-click to open the SkyDrive toolbar menu.
3. Click Add. The Files screen appears, as shown in Figure 22.8. If the file you want to add is shown in the folder that displays (in our example, the Documents folder displays), click that file. However, in some cases you may want to locate files in other folders. To do this, click the down arrow next to the word Files at the top of the screen to display a list of folders you can navigate to. Figure 22.9 shows a list of folders from which we can choose. For this example, we will choose the Pictures folder.

FIGURE 22.8

You can add files to SkyDrive using the SkyDrive app.

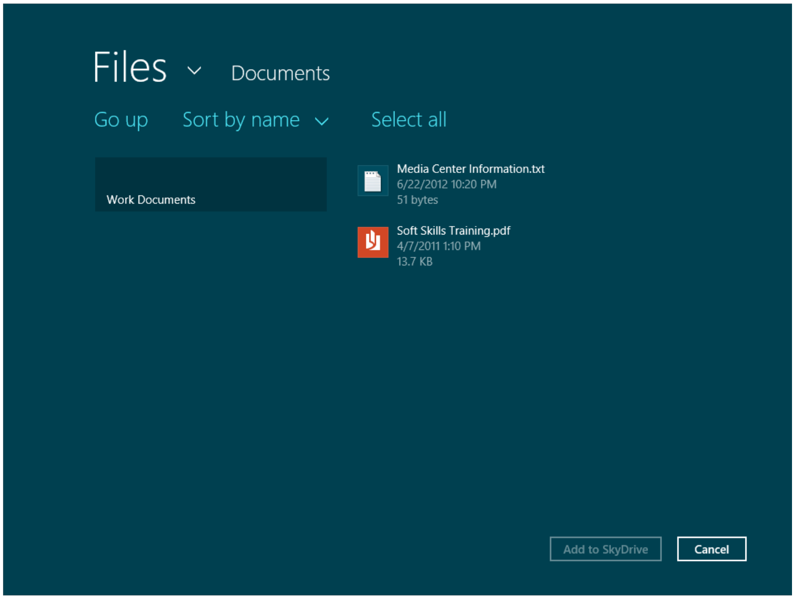
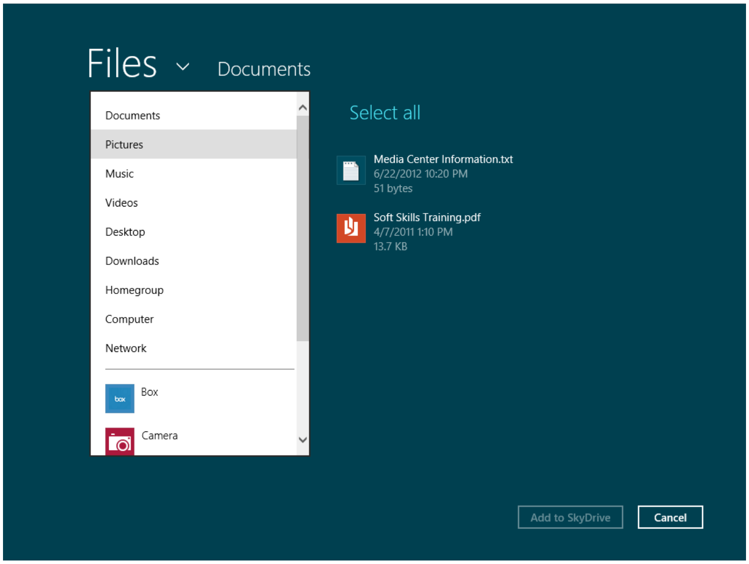

Files
Documents
Go up
Sort by name
Select all
Work Documents
Media Center Information.txt
6/22/2012 10:20 PM
51 bytes
Soft Skills Training.pdf
4/7/2011 1:10 PM
13.7 KB
Add to SkyDrive
Cancel

FIGURE 22.9

Select another folder or app to select files from.


Files
Documents
Documents
Pictures
Music
Videos
Desktop
Downloads
Homegroup
Computer
Network
Box
Camera
Select all
Add to SkyDrive
Cancel

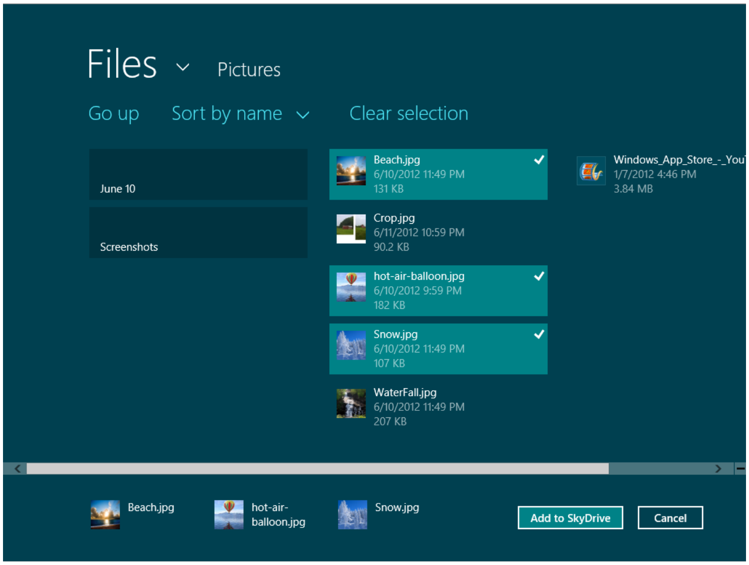
Media Center Information.txt
6/22/2012 10:20 PM
51 bytes

Soft Skills Training.pdf
4/7/2011 1:10 PM
13.7 KB

4. Select a file or multiple files to add to SkyDrive, as shown in Figure 22.10.
5. Click the Add To SkyDrive button.

FIGURE 22.10

Select files to add to SkyDrive.


Files
Pictures
Go up
Sort by name
Clear selection
June 10
Screenshots
Beach.jpg
hot-air-balloon.jpg
Snow.jpg
Add to SkyDrive
Cancel

Beach.jpg
6/10/2012 11:49 PM
131 KB

Crop.jpg
6/11/2012 10:59 PM
90.2 KB

hot-air-balloon.jpg
6/10/2012 9:59 PM
182 KB

Snow.jpg
6/10/2012 11:49 PM
107 KB

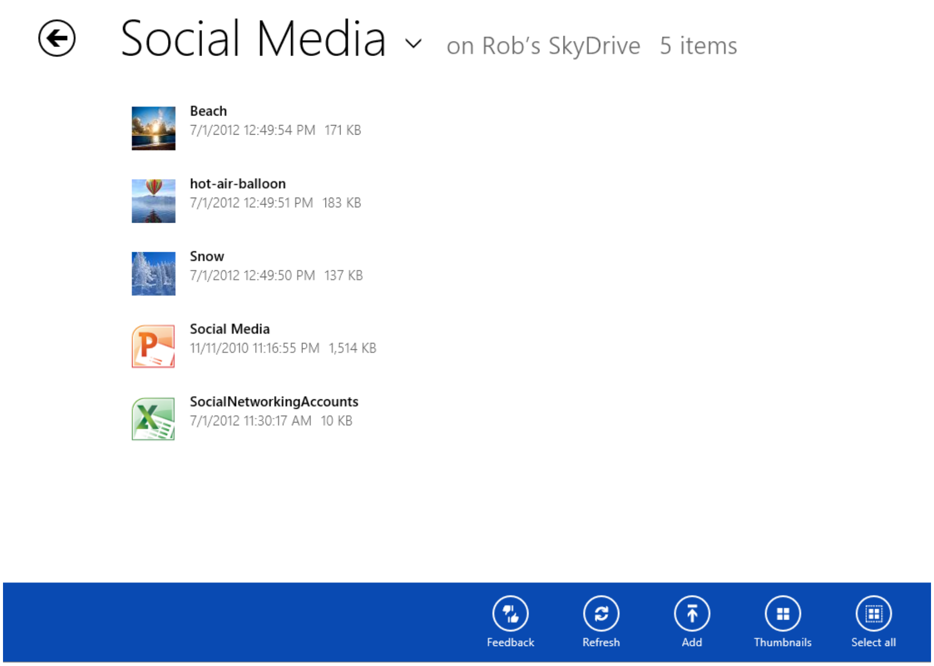
WaterFall.jpg
6/10/2012 11:49 PM
207 KB

Windows_App_Store_-_You
1/7/2012 4:46 PM
3.84 MB

The SkyDrive app uploads the files to your SkyDrive account and displays those files in your SkyDrive folder. Figure 22.11 shows an example of what this looks like.

FIGURE 22.11

The new files are added to SkyDrive.



Social Media on Rob's SkyDrive 5 items

Beach
7/1/2012 12:49:54 PM 171 KB

hot-air-balloon
7/1/2012 12:49:51 PM 183 KB

Snow
7/1/2012 12:49:50 PM 137 KB

Social Media
11/11/2010 11:16:55 PM 1,514 KB

SocialNetworkingAccounts
7/1/2012 11:30:17 AM 10 KB

Sharing files using SkyDrive

One of the most powerful uses of SkyDrive is the capability to share files with other users. With the SkyDrive app, you can share files using the Shared folders in SkyDrive, or use the Charms Bar Share tool to share using supported Windows 8 apps.

For example, you can choose to share files from SkyDrive to people you have listed in your People app. The following steps show you how to do this:

1. Open SkyDrive to the file you want to share.
2. Right-click the file to select it. A checkmark appears on the file.
3. Display the Charms Bar.
4. Click Share, as shown in Figure 22.12.

5. Click the service you want to share to, such as People.
6. Select where you would like to share the file. In our example, we are sharing with others on Facebook (see Figure 22.13).
7. Click the Add A Message area and type a message for your friends and colleagues to see.
8. Click the Send button.

FIGURE 22.12

Select a Windows 8 app, such as People, to share SkyDrive files with.

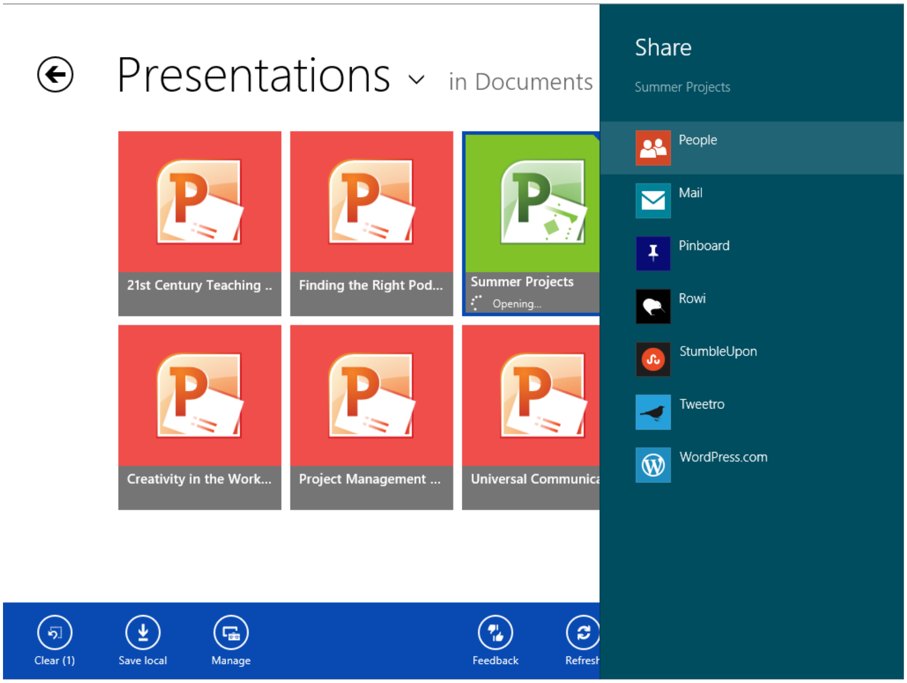
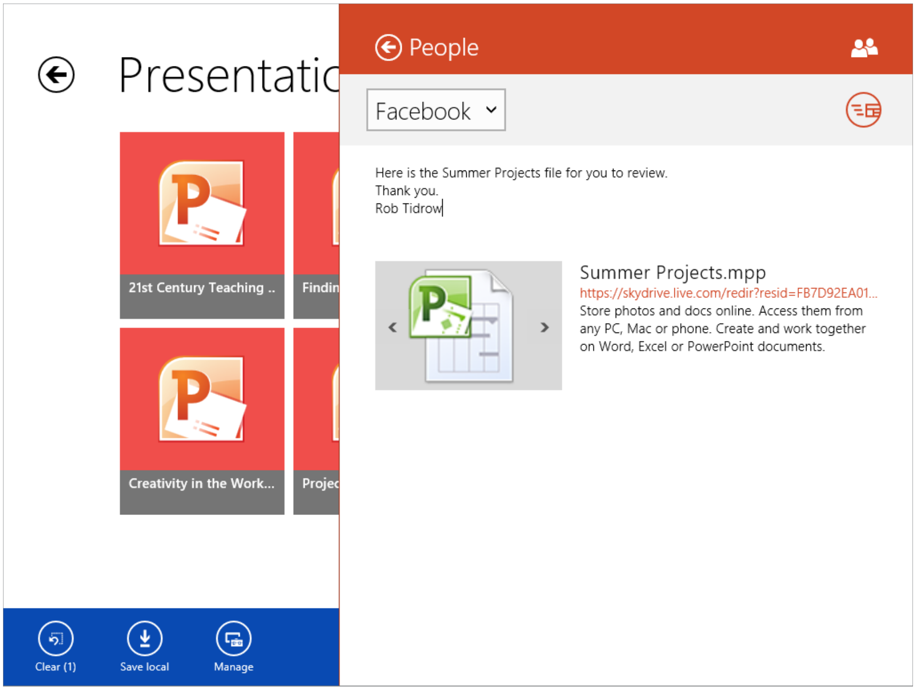

Presentations
in Documents
21st Century Teaching ..
Finding the Right Pod...
Summer Projects
Opening...
Creativity in the Work...
Project Management ...
Universal Communica
Clear (1)
Save local
Manage
Feedback
Refresh
Share
Summer Projects
People
Mail
Pinboard
Rowi
StumbleUpon
Tweetro
WordPress.com

FIGURE 22.13

We are sending a file from SkyDrive to Facebook using the People app.


Presentatic
21st Century Teaching ..
Findin
Creativity in the Work...
Projec
Clear (1)
Save local
Manage
People
Facebook
Summer Projects.mpp

Here is the Summer Projects file for you to review.
Thank you.
Rob Tidrow

https://skydrive.live.com/redir?resid=FB7D92EA01...
Store photos and docs online. Access them from any PC, Mac or phone. Create and work together on Word, Excel or PowerPoint documents.

Wrap-Up

Windows 8 provides a good platform for using the Microsoft SkyDrive cloud service. You can use a web browser (such as Internet Explorer), use the SkyDrive for Windows application, or use the SkyDrive app to access and manage your SkyDrive files.

In summary:

- SkyDrive is a cloud-based file storage and sharing tool.
- The SkyDrive for Windows application can be downloaded from `https://apps.live.com/skydrive`.
- SkyDrive Windows app provides a way to view and share your SkyDrive files.

Part V

Pictures, Music, and Movies

IN THIS PART

Chapter 23
Working with Pictures

Chapter 24
Making Music with Media Player

Chapter 25
Working with Video and Photos

Chapter 26
Using Media Center

CHAPTER

23

Working with Pictures

IN THIS CHAPTER

Getting pictures into your computer

Using your Pictures folder

Using Windows Live Photo Gallery

Fixing your photos

Understanding picture types

In the computer world, the terms picture, photo, image, graphic image, and digital image all refer to the same thing — a still picture. Windows 8 offers lots of great tools for organizing, editing, printing, and e-mailing pictures.

Today's hard disks have room to store many thousands of photos. The Windows Live Photo Gallery, an optional add-on for Windows, provides an easy way to organize and find photos based on keywords called *tags*. The Edit tab in Photo Gallery makes common tasks such as cropping and red-eye removal a breeze.

Much of this chapter focuses on Windows Live Photo Gallery as the primary tool for managing photos. You can download Windows Live Photo Gallery from `http://explore.live.com/windows-live-photo-gallery` and click the Windows Live Photo Gallery link to be taken to the page where you can download Photo Gallery.

Getting Pictures into Your Computer

You can acquire pictures to use in your computer in several ways. You can store pictures in any folder you like. If you don't have a preference, use the Pictures folder for your user account. You can always move or copy the pictures to another location later, should the need arise.

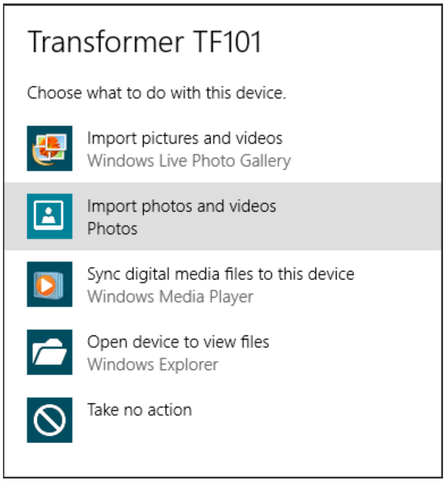
Getting pictures from a digital camera

Before we tell you how to get pictures from a digital camera, you should understand that we're talking about the digital cameras that connect through a USB cable and appear as a USB mass storage device. If the method described doesn't work for your camera, see the manual that came with that camera for details. You may have to install and use the software that came with your camera to get pictures from it, but the following steps will work with most modern digital cameras:

1. Use a USB cable to connect your camera to your computer and turn on the camera.
2. Wait a few seconds, and then:
   - If you see an auto start dialog box like the one in Figure 23.1, click Import Photos And Videos. Then skip to Step 4.
   - If nothing happens within a minute or so of connecting and turning on your camera, open Windows Live Photo Gallery. Click File in the toolbar and choose Import Photos Or Videos. Then click the icon for your camera and click Import.

FIGURE 23.1

AutoPlay options for a digital camera.



Transformer TF101

Choose what to do with this device.

Import pictures and videos
Windows Live Photo Gallery

Import photos and videos
Photos

Sync digital media files to this device
Windows Media Player

Open device to view files
Windows Explorer

Take no action

3. In the dialog box shown in Figure 23.2, click Import All New Items Now and enter a *tag* (keyword) that will later help you identify pictures. For example, enter the event, location, or subject of the photos.

TIP

Entering a tag is optional, but very useful. Try to think of keywords that describe the pictures you're importing. You can add, change, or delete tags at any time. So don't knock yourself out trying to find a word that applies to every picture.

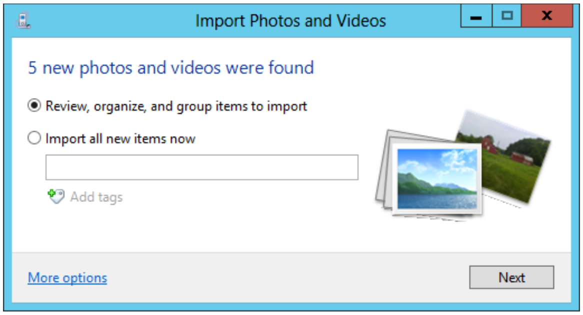
4. Click Import.
5. The next dialog box keeps you apprised of the progress.
6. When copying is finished, turn off and disconnect the camera.

TIP

If you miss the opportunity to erase pictures after importing, you can still erase those using buttons on your camera. Or, open the camera from your Computer folder and delete the pictures using standard techniques described in Chapter 28.

FIGURE 23.2

Add a tag to pictures.



Import Photos and Videos

5 new photos and videos were found

● Review, organize, and group items to import

○ Import all new items now

Depending on your camera and the types of pictures (and videos) you imported, Windows Live Photo Gallery might open and display thumbnails of your pictures. However, the pictures aren't actually stored in Photo Gallery, so don't worry if you don't see them there. The pictures are actually in your Pictures folder as described in the section "Using your Pictures folder" later in this chapter.

Getting pictures from a memory card

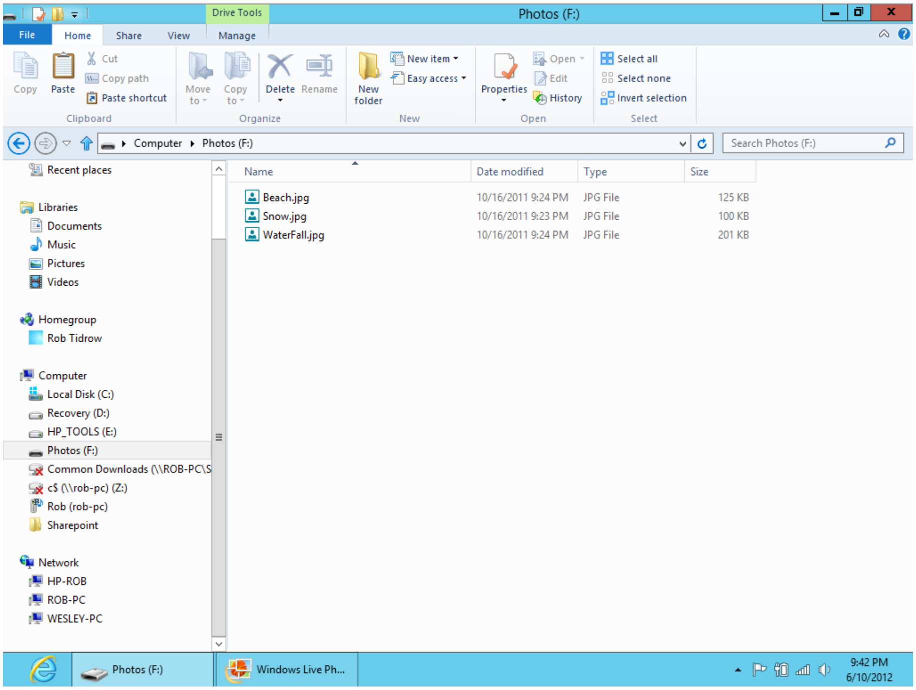
If you have pictures on a memory card, and your computer has slots for those cards or a card reader attached, you can copy pictures directly from the card. Once you've inserted a memory card into a slot, the card is basically the same as any external disk drive. You can use all the standard techniques discussed in Chapter 28 to move, copy, and delete files as you see fit.

Exactly what happens on your screen after you insert a memory card depends on your auto start settings for cards. See Chapter 41 for more information on auto start. Regardless of what happens after you first insert a card, you can always get to its contents through your Computer folder. Here's how:

1. Press Windows+X, click File Explorer, and then click Computer.
2. If necessary, scroll down through your removable drives. If you have multiple card slots, look for the one that shows a specific name. For example, in Figure 23.3, drive F: is a slot that contains a memory card labeled Photos.

FIGURE 23.3

Drive F: contains a memory card.



Drive Tools
Photos (F:)
File
Home
Share
View
Manage
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Computer
Photos (F:)
Search Photos (F:)
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Photos (F:)
Common Downloads (\\ROB-PC\S
c$ (\\rob-pc) (Z:)
Rob (rob-pc)
Sharepoint
Network
HP-ROB
ROB-PC
WESLEY-PC
Photos (F:)
Windows Live Ph...
9:42 PM
6/10/2012

Name	Date modified	Type	Size
Beach.jpg	10/16/2011 9:24 PM	JPG File	125 KB
Snow.jpg	10/16/2011 9:23 PM	JPG File	100 KB
WaterFall.jpg	10/16/2011 9:24 PM	JPG File	201 KB

3. Open the card's icon. Then navigate through folders on the card until you find the icons that represent pictures.
4. Select the icons for the pictures you want to copy, or click Home ➪ Select All (or press Ctrl+A) to select them all.

5. Drag or copy-and-paste the selected icons to your Pictures folder and ignore the following steps. Optionally, use the following steps to copy without dragging or using the copy-and-paste method.
6. Display the ribbon. Choose Edit ➪ Copy from the menu (or Cut if you want to delete the pictures from the memory card).
7. Open the destination folder for the images and press Ctrl+V to paste them into the folder.

TIP

After (not before) you've verified that pictures have been copied, you can delete them from the memory card. Select all the icons in the card as in Step 4. Then press Delete (Del) or right-click any selected icon and choose Delete.

The pictures are copied to the destination folder. You can close the folder that's open and remove the memory card. Open the destination folder to see the copied pictures.

No Memory Card Slots?

If your computer doesn't have slots for memory cards, you can easily add them by purchasing and connecting a card reader. Go to any online site that sells computer accessories. Then search for "memory card reader". If you're not interested in installing hardware inside your computer, choose a product that connects through a USB port. Make sure you know what physical size card you need to read and get an appropriate reader. Or choose a reader that works with all types of memory cards.

Getting pictures from a CD or DVD

You can store pictures and copy them in many ways on CDs and DVDs. If someone sends you a CD or DVD that contains only pictures, you will likely see a prompt on the screen shortly after you put the disk into your drive. A simple way to import the pictures from that prompt is to click Import Using Windows Picture And Video Import. Then just follow the instructions that appear on the screen. If you're prompted to enter a tag, just type in any word or short phrase that describes the pictures. All the pictures will be copied (imported) to your Pictures folder, where you can access them at any time without using the CD or DVD. But you should keep that disk as a backup.

TIP

You can also copy pictures from a CD using the standard techniques described in Chapter 28.

Some commercial CDs might automatically launch some program when inserted. That might leave you wondering how in the heck you're going to copy pictures from the disk to your computer. The trick is to simply close that program and get to the CD's contents directly. The process goes something like this:

1. Insert the disk into your CD/DVD drive and wait a few seconds. Then:
   - If an auto start dialog box asks what you want to do with the disk, click Open Folder To View Photos and go to Step 3.
   - If some program opens automatically to show the pictures, close that program and go to Step 2.
   - If nothing at all happens within a minute or so of inserting the disk, continue with Step 2.
2. Open File Explorer and right-click the icon that represents your CD/DVD drive and choose Open.
3. Now you're viewing the contents of the CD. If necessary, navigate through any folders you find until you find icons for the pictures.
4. Select the icons for the pictures you want to copy. Click the Home tab and Select All, or press Ctrl+A to select them all.
5. Drag or copy-and-paste any selected icon to the Pictures folder in the Navigation pane. Make sure you get the mouse pointer right on that Pictures folder icon so that you see Copy To My Pictures near the mouse pointer. Then release the mouse button.
6. Wait for all of the pictures to copy and then remove the CD from the drive.

You won't need the CD to access those pictures anymore. You'll be able to access them directly from your Pictures folder. But keep the CD as a backup, in case you accidentally delete or destroy any of the copied pictures.

Getting pictures from a scanner

To get photographs on paper into your computer, you use a scanner. Optionally you can use a film scanner or slide scanner to get pictures from film or slides, but those are a bit more expensive than traditional paper scanners.

The first step is, of course, to install the scanner and any required software as per the instructions that came with the scanner. The second step is to read the instructions on how to work your scanner. The steps we provide here work with most, but not all, scanners and there may be differences among different products. So if all else fails here, read the instructions that came with *your* scanner to understand the product you own.

The standard operating procedure for more modern scanners goes like this:

1. Turn on the scanner and put in the picture you want to copy.
2. Start Windows Live Photo Gallery by displaying the Charms Bar, clicking Search, and typing **live**. Click Windows Live Photo Gallery from the Apps screen.
3. Click the File toolbar button and choose Import.
4. In the Import Photos And Videos dialog box that opens, click the scanner's icon and click Import.
5. Select the scan settings from the options provided as summarized in the following list:

TIP

If you previously saved settings in a scan profile, click Select Profile and then click the profile you want to use.

- **Paper Source:** Select the type of scanner you have (flatbed, feeder, or film scanner).
- **Paper Size:** If you're using an automatic document feeder to scan multiple items, select the size of the paper you're scanning. Otherwise, leave this empty.
- **Color Format:** Choose Color, Grayscale, or Black And White.

NOTE

For a black-and-white photo, choose Grayscale. The Black And White option provides only black and white with no shades of gray. Black and white, in this context, is best used only for typewritten documents (black ink on white paper).

- **File Type:** Choose a file format. Bitmap Image offers the highest quality at the cost of a large file size. Also, bitmap is an older format that doesn't support tagging and metadata as well as newer formats. Better to use JPEG or PNG for a photo. Use Microsoft Document Imaging File only for typewritten documents, not photos.
- **Resolution (DPI):** Select your resolution dots per inch (DPI). The larger the DPI the better the quality of the scanned image, but the larger the file will be. Your best bet for color photos is 300 DPI. Use 75 DPI only for black-and-white text documents. The 150 DPI setting is okay for photos you don't intend to print. You can't change resolution after scanning, but you can rescan the item.

- **Brightness and Contrast:** Use these, if necessary, to enhance the picture's brightness and contrast. You'll need to do a preview scan to see the effects of any changes you make.

Optionally, if you plan to scan more pictures at the current settings, click Save Profile and give your profile a name.

6. Click Scan.

When the scan is complete, the picture appears in the Photo Gallery. The actual picture file is in your Pictures folder.

NOTE
For information on Windows Fax and Scan, see Chapter 35.

Using pictures you get by e-mail

Pictures that are embedded in, or attached to, e-mail messages you receive won't show up in Photo Gallery at first. You need to save the picture(s) to your Pictures folder if you want to access and edit them using techniques described in this chapter.

Exactly how you save attachments and embedded pictures depends on your e-mail program. For most e-mail clients, it's a simple matter of right-clicking the attachment's icon and choosing Save As. In the case of a picture that's visible in the body of the message, right-click the picture and choose Save Picture As. However, do keep in mind that all e-mail clients and systems are different. If you can't figure out how to save attachments or pictures in your e-mail, search your ISP or e-mail provider's e-mail support for **attachment**, or contact its technical support.

Copying pictures from websites

Needless to say, billions of pictures exist on the Internet. You can often find just the picture you're looking for by going to a site like `http://images.google.com` and searching for an appropriate word or phrase.

If you find a picture you can use (and you're not infringing on anyone's copyright in the process), you can store a copy of the picture in any folder of your choosing. If the picture you see on the screen is a link to a larger copy of the image, click to get to the larger copy of the picture. Then use whatever options your web browser provides to save a copy of the picture. Here are the steps for Internet Explorer, the web browser that comes with Windows 8:

1. In Internet Explorer, right-click anywhere on the picture you want and choose Save Picture As (see Figure 23.4).
2. Click Pictures in the Navigation pane. Of course, you can choose some other folder if you prefer. For example, double-click any subfolder icon in the main

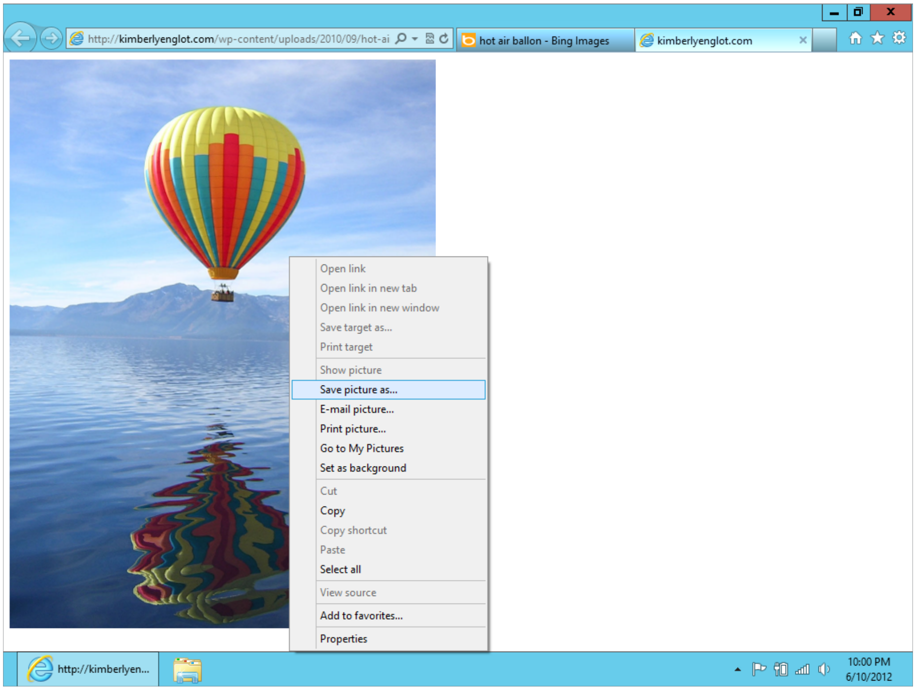
pane to store the picture in that subfolder. You can also perform other tasks, including the following:

- To put the picture in a subfolder of the folder you just opened, double-click that subfolder's icon.
- Change the filename of the picture to a filename of your own choosing.
- Click to the right of the Save As Type label and choose a format. (JPEG works best if you plan to use Windows Live Photo Gallery.)

3. Click Save.

FIGURE 23.4

Saving a picture


http://kimberlyenglot.com/wp-content/uploads/2010/09/hot-ai
hot air ballon - Bing Images
kimberlyenglot.com
Open link
Open link in new tab
Open link in new window
Save target as...
Print target
Show picture
Save picture as...
E-mail picture...
Print picture...
Go to My Pictures
Set as background
Cut
Copy
Copy shortcut
Paste
Select all
View source
Add to favorites...
Properties
http://kimberlyen...
10:00 PM
6/10/2012

A copy of the picture is saved in whatever folder you specified in Step 2.

NOTE

For more information on saving files, see "Saving Things in Folders" in Chapter 27.

Copy-and-paste pictures

You can copy an open picture from just about any document to any document that accepts pictures. For example, you can copy-and-paste a picture from a web page to a Microsoft Word document. You just have to make sure the picture is open (not just an icon or thumbnail). To copy-and-paste an open picture:

1. Right-click the picture and choose Copy.
2. Right-click where you want to put the picture and choose Paste.

You can use the same technique to make a copy of a picture within a folder or Windows Live Photo Gallery. Right-click the icon or thumbnail of the picture you want to copy and choose Copy. Then right-click some empty place within the folder (perhaps after the last icon) and choose Paste. The copy will have the same filename as the original, followed by `–Copy`.

Taking screenshots

CAUTION

The Snipping Tool lets you take a screenshot and also annotate it with your own text. For information on using the Snipping Tool, see the Windows 8 online help.

A screenshot is like a photo of something you see on your screen. Most of the pictures in this book are screenshots. You can create screenshots in Windows 8 in two ways. One is to use the Snipping Tool. The other is to use the Print Screen key.

The Print Screen key gets its name from the early days of computers where pressing it actually printed whatever was on your screen at the moment to paper. It hasn't worked that way in a long time. Today the Print Screen key takes a snapshot of the screen and puts it in the Windows Clipboard where it just sits waiting for you to paste the Clipboard contents (or until you copy or cut something else to the Clipboard). You can use the Print Screen key in three ways:

- **Print Screen:** Takes a snapshot of the entire screen.
- **Alt+Print Screen:** Takes a snapshot of the active window only.
- **Windows+Print Screen:** Takes a snapshot of the entire screen, saves it to the `Picture\Screenshots` folder, and names it using the format `Screenshot.png`, `Screenshot (2).png`, `Screenshot (3).png`, and so on.

NOTE

The Print Screen key may be labeled Prnt Scrn, PrtScn, or something similar on your keyboard.

To make a screenshot, get the screen looking the way you want. Then follow these steps:

1. Press Windows+Print Screen, Print Screen, or Alt+Print Screen.
2. Open your favorite graphics program. If you don't have one, use Search and type **Paint** to open Paint (which comes with Windows 8).

NOTE

You can paste the snapshot into a document (like a Microsoft Word document). But if you do, you won't be able to treat it like a normal editable picture that is saved separately on disk. It's a good idea to paste it into Paint or some other graphics program and save it as a JPEG or PNG file. You cannot paste the snapshot into a folder or Windows Live Photo Gallery.

3. Choose your program's Paste command (usually located in the Edit menu, or for Paint, in the Home toolbar), or press Ctrl+V. The screenshot is pasted into the program.
4. Exit Paint or your graphics program by clicking the Close (X) button.
5. When you see a message asking if you want to save your changes, click Yes. The Save As dialog box opens.
6. In the Save As dialog box, type a filename of your own choosing.
7. The Save location should already be your Pictures folder (for example, `C:\Users\`*`Your User Name`*`\Pictures`). If it's not, navigate to your Pictures folder (or the folder in which you want to store screenshots).
8. Set the Save As Type option to PNG or JPEG unless you have a good reason for using a different format.
9. Click the Save button.

My Print Screen Key Doesn't Work

If the Paste option on Paint's Home toolbar is disabled (dimmed), that means there is nothing on the Clipboard. That might happen for a couple reasons. You might have forgotten to press Windows+Print Screen, Print Screen, or Alt+Print Screen. Or perhaps you copied something else to the Clipboard after pressing Print Screen. And that "something else" isn't a picture.

The second possible problem is that your keyboard works differently. For example, on some keyboards you have to press Shift+Print Screen or Shift+Alt+PrintScreen. On some laptop computers, you have to click Fn+Print Screen. On other keyboards, you have to make sure the F Lock key is turned off before pressing the Print Screen key.

If you can't find the right combination of keystrokes for your system, see if you can find the information in the manual that came with your computer, or contact your computer manufacturer and see if they can help.

You won't see anything on your screen. But rest assured, the screenshot is saved as a file in whatever folder you specified in Step 7, with whatever filename you specified in Step 6. If you chose your Pictures folder in Step 7, you'll find the file when you open your Pictures folder, described next.

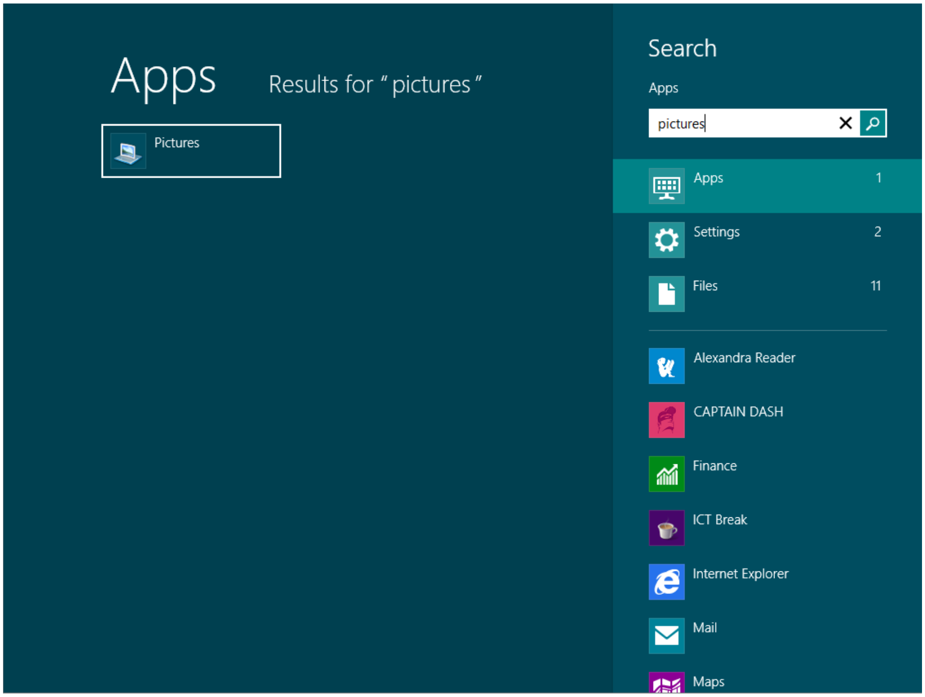
Using Your Pictures Folder

As its name implies, the Pictures folder is the place to store pictures. Many of the techniques described in the preceding section put pictures in that folder automatically. To view pictures, just open your Pictures folder using whichever technique is most convenient at the moment:

- Using Search, type **pictures** and click Pictures in the Apps screen (see Figure 23.5).

FIGURE 23.5

The Pictures option on the Start menu

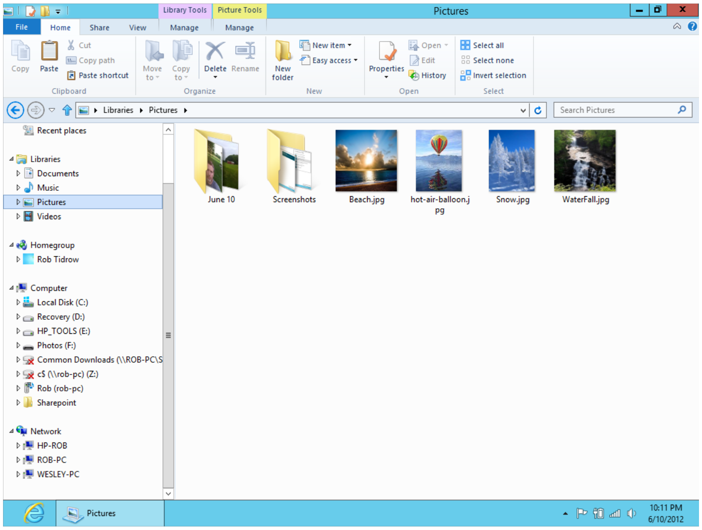


Apps
Results for "pictures"
Pictures
Search
Apps
pictures
Apps 1
Settings 2
Files 11
Alexandra Reader
CAPTAIN DASH
Finance
ICT Break
Internet Explorer
Mail
Maps

- Click Pictures in Explorer's Navigation pane (see Figure 23.6).

FIGURE 23.6

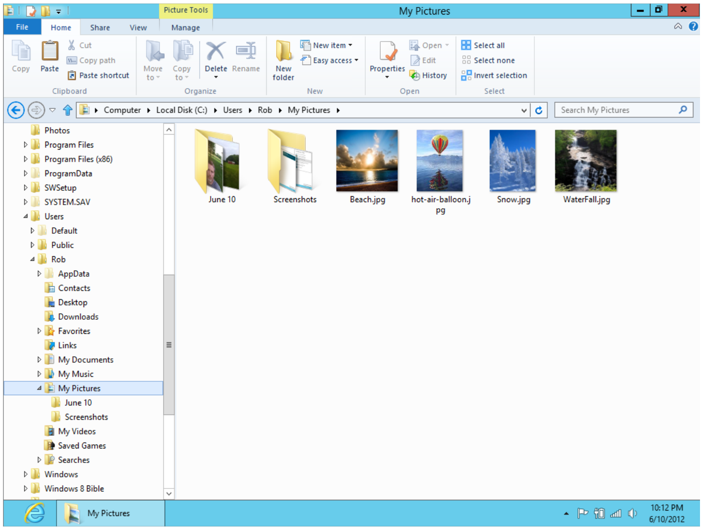
The Pictures link in the Navigation pane


Library Tools
Picture Tools
Pictures
File
Home
Share
View
Manage
Manage
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Libraries ▸ Pictures ▸
Search Pictures
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Photos (F:)
Common Downloads (\\ROB-PC\S
c$ (\\rob-pc) (Z:)
Rob (rob-pc)
Sharepoint
Network
HP-ROB
ROB-PC
WESLEY-PC
June 10
Screenshots
Beach.jpg
hot-air-balloon.jpg
Snow.jpg
WaterFall.jpg
Pictures
10:11 PM
6/10/2012

- Click your username in a breadcrumb menu and choose Pictures (see Figure 23.7).

FIGURE 23.7

The Pictures link from a breadcrumb menu

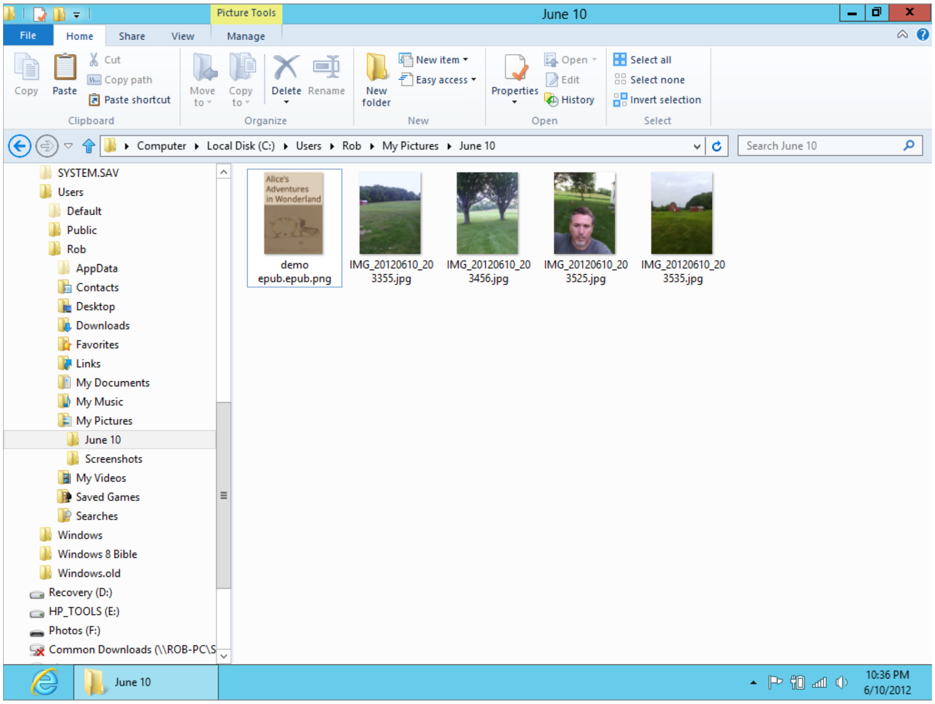

Picture Tools
My Pictures
File
Home
Share
View
Manage
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Computer ▸ Local Disk (C:) ▸ Users ▸ Rob ▸ My Pictures ▸
Search My Pictures
Photos
Program Files
Program Files (x86)
ProgramData
SWSetup
SYSTEM.SAV
Users
Default
Public
Rob
AppData
Contacts
Desktop
Downloads
Favorites
Links
My Documents
My Music
My Pictures
June 10
Screenshots
My Videos
Saved Games
Searches
Windows
Windows 8 Bible
June 10
Screenshots
Beach.jpg
hot-air-balloon.jpg
Snow.jpg
WaterFall.jpg
My Pictures
10:12 PM
6/10/2012

Your Pictures folder opens in Explorer and is no different from any other folder. You can use all the tools and techniques described in Chapter 28 to size and arrange icons, hide and show panes, and so forth.

Pictures that you copied from a camera or scanner will likely be stored in subfolders. The name of the subfolder will be the same as the date on which you acquired the pictures, followed by any tag word you added. Figure 23.8 shows an example. The folders whose names start with `IMG_20120610_20` contain pictures we copied from a digital camera on that date.

FIGURE 23.8

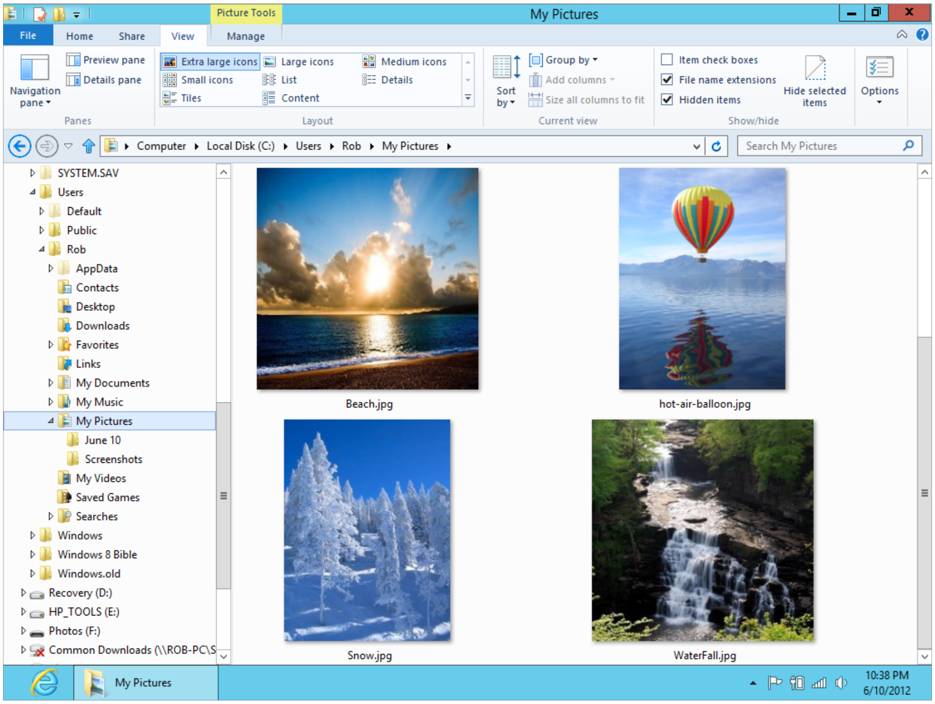
Sample Pictures folder


Picture Tools
June 10
File
Home
Share
View
Manage
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Computer ▸ Local Disk (C:) ▸ Users ▸ Rob ▸ My Pictures ▸ June 10
Search June 10
SYSTEM.SAV
Users
Default
Public
Rob
AppData
Contacts
Desktop
Downloads
Favorites
Links
My Documents
My Music
My Pictures
June 10
Screenshots
My Videos
Saved Games
Searches
Windows
Windows 8 Bible
Windows.old
Recovery (D:)
HP_TOOLS (E:)
Photos (F:)
Common Downloads (\\ROB-PC\S
Alice's Adventures in Wonderland
demo epub.epub.png
IMG_20120610_20 3355.jpg
IMG_20120610_20 3456.jpg
IMG_20120610_20 3525.jpg
IMG_20120610_20 3535.jpg
June 10
10:36 PM
6/10/2012

When you open a subfolder that contains pictures, you'll see a thumbnail icon for each one. The size of that thumbnail and the amount of textual information shown with each depends on where you place the Views slider in the toolbar. If the Preview pane is open, pointing to a thumbnail displays an enlarged copy of the thumbnail. Figure 23.9 shows an example. To choose which panes you want to show or hide, click the View toolbar and make your selections in the Layout area.

FIGURE 23.9

Folder of pictures


Picture Tools
My Pictures
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Tiles
Content
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
☐ Item check boxes
☑ File name extensions
☑ Hidden items
Hide selected items
Show/hide
Options
Computer ▸ Local Disk (C:) ▸ Users ▸ Rob ▸ My Pictures ▸
Search My Pictures
SYSTEM.SAV
Users
Default
Public
Rob
AppData
Contacts
Desktop
Downloads
Favorites
Links
My Documents
My Music
My Pictures
June 10
Screenshots
My Videos
Saved Games
Searches
Windows
Windows 8 Bible
Windows.old
Recovery (D:)
HP_TOOLS (E:)
Photos (F:)
Common Downloads (\\ROB-PC\S
Beach.jpg
hot-air-balloon.jpg
Snow.jpg
WaterFall.jpg
My Pictures
10:38 PM
6/10/2012

Pictures folder quick tips

Here are some quick tips that apply to most folders, with a few things that are unique to your Pictures folder:

- If your mouse has a wheel, hold down the Ctrl key while spinning the wheel to size thumbnails and change views.
- Drag the inner border of the Navigation or Preview pane to widen or narrow the pane.
- To open a subfolder, click (or double-click) its icon. To leave a subfolder, click the Back button or press Backspace.

TIP

Whether you need to click or double-click depends on settings in Folder Options. Click the View toolbar and choose Options. Make your selection under Click Items As Follows and click OK.

- To rotate a picture, right-click its thumbnail and choose Rotate Right or Rotate Left.

NOTE
If the Rotate options are disabled or missing, the picture's file type can't be rotated in Windows, but you can open and rotate it in many graphics programs.

- To preview a larger version of a picture, click (or double-click) its thumbnail.
- To view all the pictures in the folder as a slide show, click the Slide Show toolbar button on the Manage tab.
- Right-click any thumbnail icon for a shortcut of things you can do with that item.
- Use standard techniques described in Chapter 28 to select multiple icons that you want to print, copy, and so forth. To select all icons, click Home ➪ Select All or press Ctrl+A.
- To e-mail pictures using a default e-mail program installed on your computer, select their thumbnail icons. Then click the E-mail toolbar button on the Share tab.

NOTE
The E-mail button isn't visible until you select one or more icons in the folder. Also, it doesn't work with all e-mail programs. See Chapter 18 for more information.

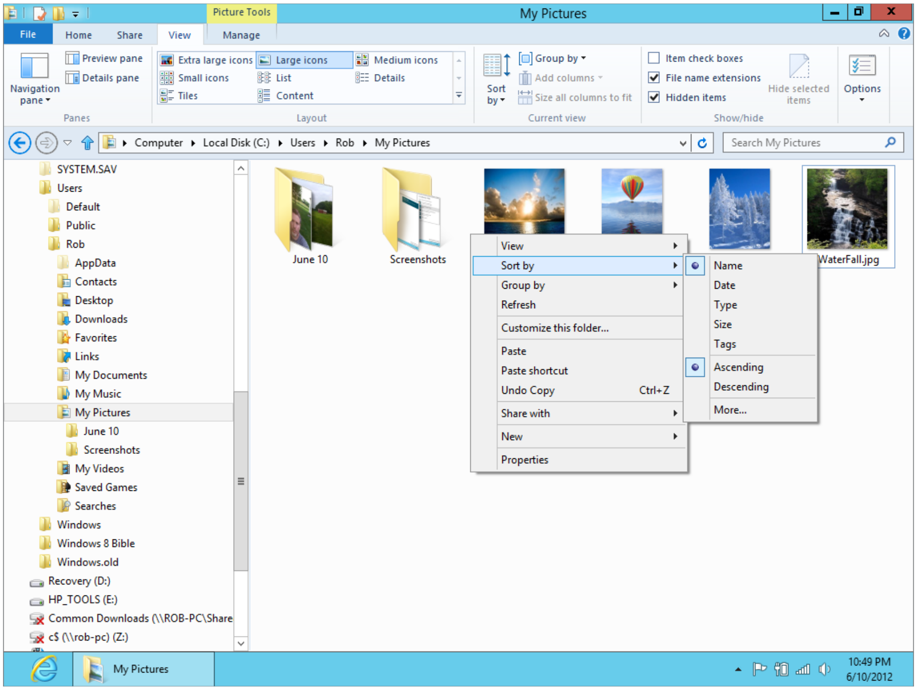
- Click Burn To Disc to copy all pictures in a folder to a writable CD or DVD. To copy only specific items, select their icons and click Burn.

NOTE
Copying to CD and DVD isn't like copying to other media. Chapter 28 provides the full story.

- Right-click any column heading in Details view to choose which columns you want to show or hide.
- Click any column heading to sort thumbnails into ascending or descending order by Name, Date Taken, Rating, or any other heading.
- Click the arrow next to any column heading, as in Figure 23.10, or right-click empty space between icons to arrange or sort by Name, Date, Type, Size, or Tags.

FIGURE 23.10

Grouping options


Picture Tools
My Pictures
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Tiles
Content
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Item check boxes
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Computer
Local Disk (C:)
Users
Rob
My Pictures
Search My Pictures
SYSTEM.SAV
Users
Default
Public
Rob
AppData
Contacts
Desktop
Downloads
Favorites
Links
My Documents
My Music
My Pictures
June 10
Screenshots
My Videos
Saved Games
Searches
Windows
Windows 8 Bible
Windows.old
Recovery (D:)
HP_TOOLS (E:)
Common Downloads (\\ROB-PC\Share
c$ (\\rob-pc) (Z:)
June 10
Screenshots
WaterFall.jpg
View
Sort by
Group by
Refresh
Customize this folder...
Paste
Paste shortcut
Undo Copy Ctrl+Z
Share with
New
Properties
Name
Date
Type
Size
Tags
Ascending
Descending
More...
My Pictures
10:49 PM
6/10/2012

TIP

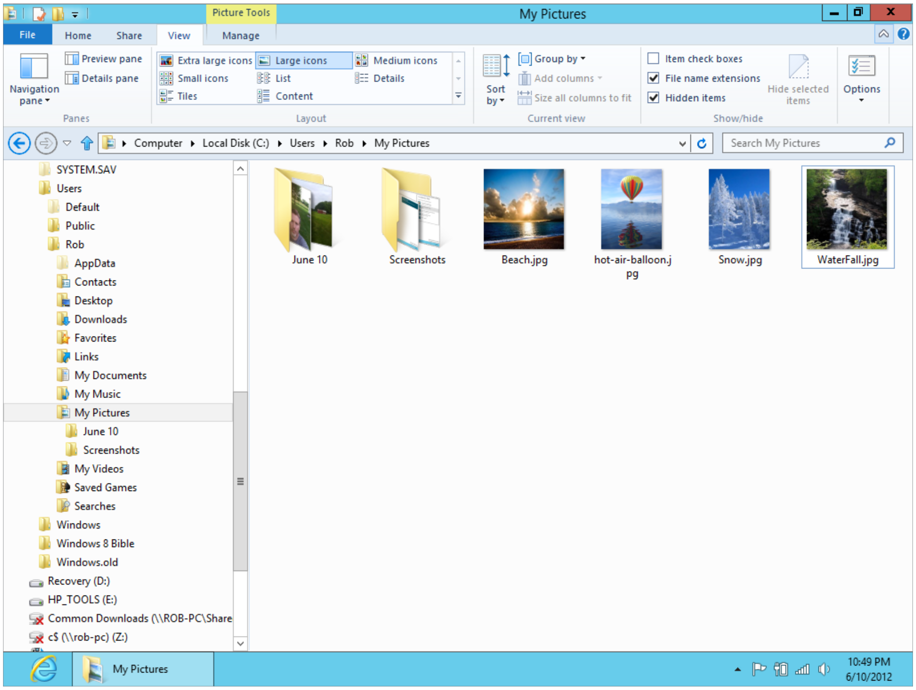
See "Using Windows Live Photo Gallery" later in this chapter for more information on tags. See Chapter 29 for more info on grouping, stacking, and filtering.

- When the Details pane is open, you can use it to add a tag or title to any selected pictures or multiple selected pictures.
- If you have multiple programs that can open a picture type, right-click the thumbnail and choose Open With to open the picture in whatever program you like, or choose a program name from the Preview toolbar button.

- To show or hide the ribbon bar, click the Minimize The Ribbon or Expand The Ribbon arrow on the right side of the menu bar. You also can press Ctrl+F1 (see Figure 23.11).
- To show or hide filename extensions, click Organize and choose Folder And Search Options. Click the View tab, select or clear the Hide Extensions For Known File Types check box, and click OK.

FIGURE 23.11

Layout options on the Organize menu


Picture Tools
My Pictures
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Tiles
Content
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Hide selected items
Show/hide
Options
Computer ▸ Local Disk (C:) ▸ Users ▸ Rob ▸ My Pictures
Search My Pictures
SYSTEM.SAV
Users
Default
Public
Rob
AppData
Contacts
Desktop
Downloads
Favorites
Links
My Documents
My Music
My Pictures
June 10
Screenshots
My Videos
Saved Games
Searches
Windows
Windows 8 Bible
Windows.old
Recovery (D:)
HP_TOOLS (E:)
Common Downloads (\\ROB-PC\Share
c$ (\\rob-pc) (Z:)
June 10
Screenshots
Beach.jpg
hot-air-balloon.jpg
Snow.jpg
WaterFall.jpg
My Pictures
10:49 PM
6/10/2012

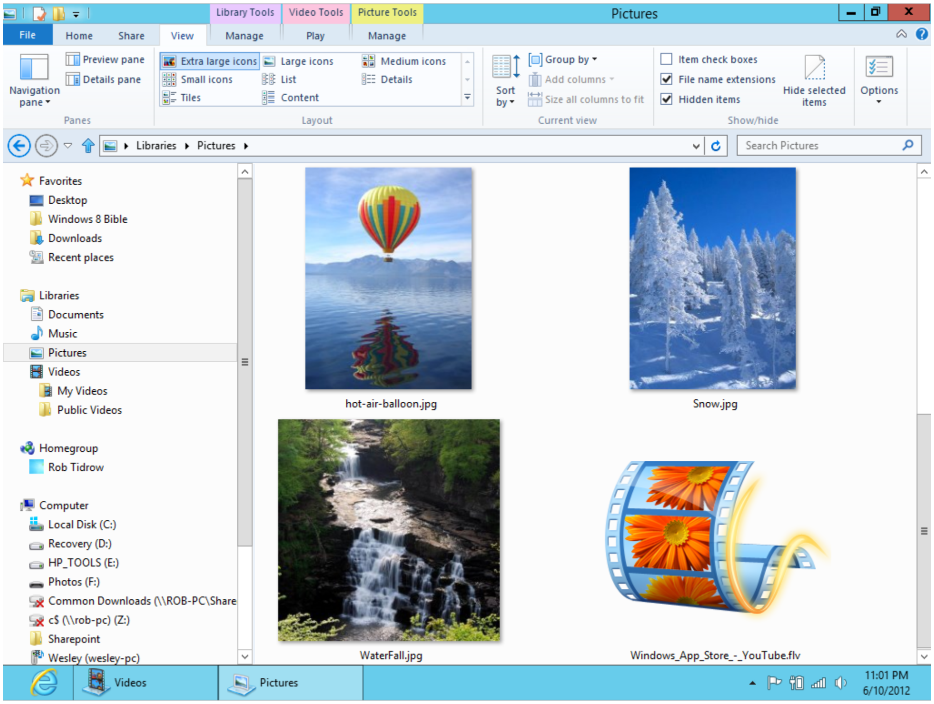
☐ Item check boxes
☑ File name extensions
☑ Hidden items

Why some pictures show icons

Not all file types show as pictures in your Pictures folder. Some, such as videos you import from a camera in MP4, MOV, or some other format, show only icons. For example, in Figure 23.12, the icon on the bottom right is a video stored in Adobe Flash format (`.flv` format).

FIGURE 23.12

Icon for a Flash video


Library Tools
Video Tools
Picture Tools
Pictures
File
Home
Share
View
Manage
Play
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Tiles
Content
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
☐ Item check boxes
☑ File name extensions
☑ Hidden items
Hide selected items
Options
Show/hide
Libraries ▸ Pictures ▸
Search Pictures
Favorites
Desktop
Windows 8 Bible
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
My Videos
Public Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Photos (F:)
Common Downloads (\\ROB-PC\Share
c$ (\\rob-pc) (Z:)
Sharepoint
Wesley (wesley-pc)
hot-air-balloon.jpg
Snow.jpg
WaterFall.jpg
Windows_App_Store_-_YouTube.flv
Videos
Pictures
11:01 PM
6/10/2012

If you have an appropriate player for a file type, you can still open it by double-clicking. For example, if you have the Applian FlvPlayer program (available for free from `http://mdvisser.nl/flvplayer/`), you can double-click any Flash video icon to watch it.

CAUTION

Changing the filename extension using Rename will not work. In fact, if you do that, you may not be able to open the file at all until you rename it back to the original filename extension!

If it's important to be able to see the thumbnail of a picture or icon, you have to convert the image or video to a compatible format like JPEG (for a picture) or WMV (for a video). For a single picture, you can often achieve this just by opening the picture in a graphics program. If you don't have a favorite graphics program, you can use Paint (right-click any picture and choose Open With ➪ Paint). From the menu bar in your graphics program, choose File ➪ Save As. Use the Save As Type option in the Save dialog box to save the picture as a JPEG or some other compatible format and click Save.

Some graphics programs, like Corel's Paint Shop Pro, let you convert a whole group of pictures from one format to another rather than changing them one at a time. You can also go to any online shareware service such as `www.tucows.com` or `www.download.com` and search for "convert picture" to find programs that specifically offer batch conversions. Search for "convert video" for programs that can convert videos.

TIP

If you want to put videos on your mobile devices, such as an iPod, iPad, Android, or other mobile device, check out `www.pqdvd.com` for a converter.

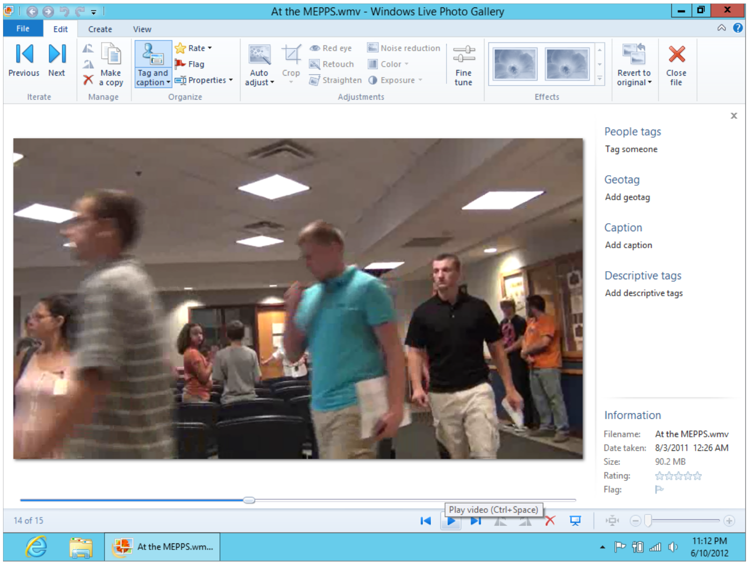
Videos in your Pictures folder

If your digital camera lets you shoot video clips, those will be imported along with your still pictures. If the video is in a compatible format, its thumbnail shows the first frame of the video. It also shows a film-like border and the icon of the default program for playing that type of video.

When you select a video thumbnail, the Preview pane turns to a small video screen with controls that work like a DVD player. Figure 23.13 shows an example with a video selected. The video preview pane to the right shows the first frame of the video. To watch the video in that preview, click the Play button under the video.

FIGURE 23.13

Video thumbnail icon selected


At the MEPPS.wmv - Windows Live Photo Gallery
File
Edit
Create
View
Previous
Next
Iterate
Make a copy
Manage
Tag and caption
Rate
Flag
Properties
Organize
Auto adjust
Crop
Red eye
Retouch
Straighten
Noise reduction
Color
Exposure
Fine tune
Adjustments
Effects
Revert to original
Close file
People tags
Tag someone
Geotag
Add geotag
Caption
Add caption
Descriptive tags
Add descriptive tags
Information
Play video (Ctrl+Space)
14 of 15
At the MEPPS.wm...
11:12 PM
6/10/2012

Filename: At the MEPPS.wmv
Date taken: 8/3/2011 12:26 AM
Size: 90.2 MB
Rating: ☆☆☆☆☆
Flag:

When the video starts playing, you can click the Full Screen button under the preview window to watch it full-screen. Click anywhere on that full-screen video to return to the desktop and your Pictures folder.

Renaming pictures and videos

Pictures and videos from cameras often have obscure meaningless filenames like `100_9630` or `DCM1234`. You can change the name of any file by right-clicking its thumbnail and choosing Rename. Or, you can select multiple thumbnails, right-click any one of them, and choose Rename. The current filename is highlighted.

Type the new name. (Never change the extension that comes after the period.) Then press Enter. If you renamed one file, only that file's name is changed. If you renamed several files, they'll all have the same name followed by a number; for example, `Swans (1)`, `Swans (2)`, `Swans (3)`, and so forth.

If you change your mind after renaming, press Undo (Ctrl+Z). But you have to do it right after pressing Enter. If you move on to other tasks, you may not be able to undo the rename.

There's much more to pictures and videos than looking at them in your Pictures folder. Next, you take a look at Windows Live Photo Gallery, a handy tool that you can download from Microsoft to use with Windows 8.

Using Windows Live Photo Gallery

Windows Live Photo Gallery is a program that helps you bring together pictures and videos from all the subfolders in your Pictures folder. The program is not included with Windows 8, but you can download it from `http://explore.live.com/windows-live-photo-gallery`.

TIP

Windows Live Photo Gallery is a great tool for managing a large photo collection.

Photo Gallery isn't a folder where you store files. Rather, it's a way of organizing and accessing files without having to navigate around multiple folders. For example, you can view all your photos at once, regardless of what folders they're in. Or better yet, you can locate and work with pictures that have certain things in common, such as all the pictures of your child (if you're a parent).

The only disadvantage of Windows Live Photo Gallery is that it doesn't show icons for all pictures and videos. Anything that doesn't show a thumbnail in your Pictures folder doesn't show up at all in Photo Gallery! Photo Gallery shows thumbnails for BMP, JFIF, JPEG, JXR, ICO, PNG, TIFF, and WDP photos and WMV, AVI, ASF, and MPEG movies.

The easiest way to understand what Windows Live Photo Gallery is all about is to fire it up and take a look for yourself. Use whichever method shown here is easiest for you:

- Click Windows Live Photo Gallery on the Start screen.
- Tap ⊞, type **gal**, and click Windows Live Photo Gallery.

Figure 23.14 shows how Photo Gallery might look when you first open it. Of course, the pictures you see will be your own (if you have any). Also, you might be prompted to associate various file types with Photo Gallery. If so, select the file format(s) you want associated with Photo Gallery.

FIGURE 23.14

Windows Photo Gallery

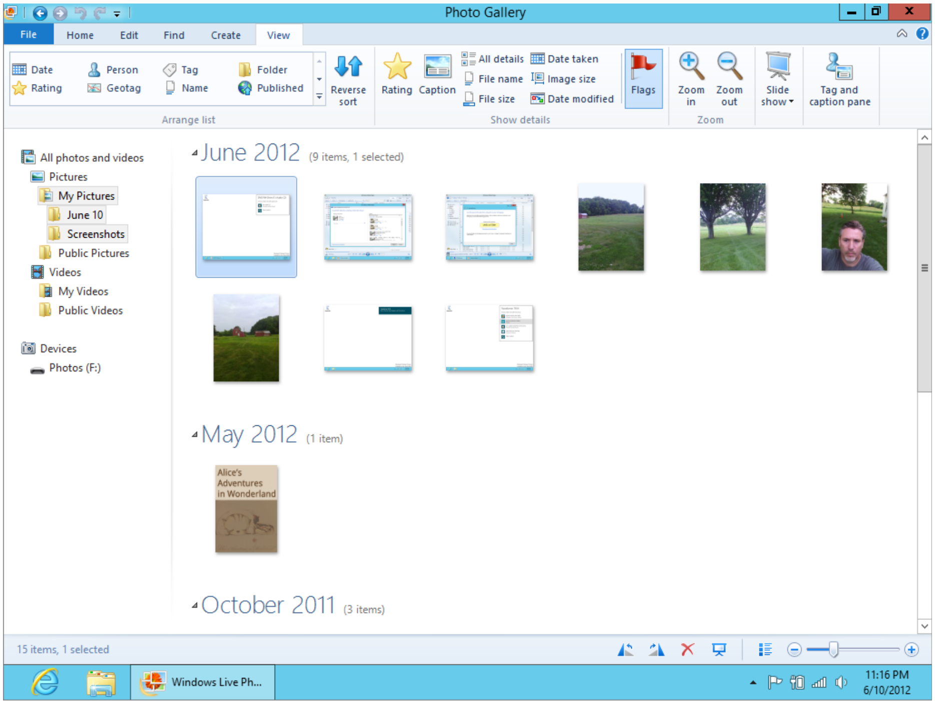


Photo Gallery
File
Home
Edit
Find
Create
View
Date
Rating
Person
Geotag
Tag
Name
Folder
Published
Reverse sort
Arrange list
Rating
Caption
All details
File name
File size
Date taken
Image size
Date modified
Show details
Flags
Zoom in
Zoom out
Zoom
Slide show
Tag and caption pane
All photos and videos
Pictures
My Pictures
June 10
Screenshots
Public Pictures
Videos
My Videos
Public Videos
Devices
Photos (F:)
June 2012 (9 items, 1 selected)
May 2012 (1 item)
Alice's Adventures in Wonderland
October 2011 (3 items)
15 items, 1 selected
Windows Live Ph...
11:16 PM
6/10/2012

Like any program window, you can minimize, maximize, move, and size Photo Gallery to your liking. (Although there is a limit to how small you can make it.) Photo Gallery has its own Help. Click the blue Help button at the right side of its toolbar to open Help (or press F1 if Photo Gallery is the active window).

Choosing what to view and how

The Photo Gallery can show you all the photos and videos on your hard drive (or multiple hard drives), or it can show only certain ones. To get started, you'll want to see everything that's in the Photo Gallery right now. To do that, click All Photos And Videos at the top of the Navigation pane. If you just want to see pictures, click My Pictures under the All Photos And Videos heading. If you just want to see Videos, click My Videos under that same heading.

The gallery to the right of the Navigation pane shows a thumbnail for each photo and video currently in the gallery.

Use the slider at the bottom of the Photo Gallery window to change the size of the thumbnails. The button to the left of the slider lets you choose between Details view and regular thumbnail view. Details view shows the filename, date taken, file size, rating, and other details about each image.

To group or arrange pictures in the gallery, right-click in the right pane and choose View, Group By, or Sort By and whatever option best describes how you want things organized.

Also in the context menu when you right-click is a Table Of Contents option. Clicking that opens a Table Of Contents pane to the left of the Thumbnails. The Table of Contents works in conjunction with the current Group By option on the Thumbnail View button. For example, if you group by Month, the Table of Contents lets you jump to all pictures taken in a specific month and year. If you group by Image Size, the Table of Contents provides links to large, medium, and small pictures, and so forth.

Go ahead and play around with those buttons and options for a while. You can't do any harm. But some of the grouping and arranging options won't have any real effect until you've built up a sizable collection of pictures. Remember that anything you choose right now you can change at any time in the future. You're not making any long-term commitments here while experimenting with views and arrangements.

Photo Gallery quick tips

Following are some other good things to know. If any item listed doesn't work for you, see the section "Choosing Photo Gallery options" later in this chapter.

- Rest the mouse pointer on any thumbnail to see a larger view of the picture.
- To rotate a picture, right-click it and choose a Rotate option.
- Click the View tab and then click the Tag and Caption Pane. Next, click any picture to see its information in the Tag and Caption pane on the far right where you can add tags, captions, and geotags.

- Double-click any picture to preview it at a larger size and view options for adjusting the photo's image properties. Click Close File to leave the preview.
- Click View ➪ Slide Show to watch a slide show.
- To open a picture or video in a program, right-click its thumbnail, click the Open With option, and choose a program.
- Click the File button and choose Import Photos And Videos to import pictures from a digital camera or scanner.
- To print selected pictures, choose File ➪ Print and then select a printing option. (See "Printing Pictures" later in this chapter for details and options.)
- To open the folder in which a picture is contained, right-click its thumbnail and choose Open File Location.

Selecting thumbnails in the Gallery

As in folders, you can select multiple thumbnails in Photo Gallery. This can be handy when you want to apply a similar rating, tag, or caption to pictures, or when you want to create a slide show from several pictures, print several pictures, and so forth. You can use the same techniques you use in folders to select thumbnails in the gallery.

In addition to the standard methods of selecting thumbnails (and icons), you can select multiple thumbnails just by clicking their check boxes. Any thumbnail that has a checkmark is selected. Any thumbnail that doesn't have a checkmark is unselected.

To select all the pictures in the gallery, click any single picture and press Ctrl+A, or right-click some empty space just outside the thumbnails and choose Select All. If you want to select most (but not all) of the pictures, select them all first. Then Ctrl+click the pictures you want to deselect, or clear their check boxes.

Dating, rating, tagging, and captioning

Tagging is one of the biggest advantages to having all of your pictures in Windows Live Photo Gallery. A tag is simply some keyword or phrase that you make up to identify pictures — for example, the location where the picture was shot, the subject of the picture, or the names of people in the picture. You can apply as many tags as you want to a picture, and you can add, change, or delete tags at any time.

Rating allows you to rate photos on a scale of 1 to 5 stars based on how much you like the picture. Captions allow you to title pictures with words of your own choosing. Use the Info pane to rate, tag, and caption pictures.

First, click the thumbnail picture that you want to rate. Or, if you want to apply the same rating, tags, or caption to multiple pictures, select all of their icons. Then:

- To rate the selected picture(s), click View ➪ Rating, and click any star near the bottom of the picture (see Figure 23.15). To give a zero rating, click a star, and then click it again.

- To tag the selected picture(s), click View ➪ Tag and Caption Pane, click a picture, and then click Add Descriptive Tags under the Descriptive Tags item. Type one tag (preferably a single word or two) and press Enter. Optionally, type more tags in the same manner, pressing Enter after each tag.

Tip

If the picture contains people you know, consider typing each person's name as a separate tag. That way, you can later search for pictures of that person, or pictures that contain several specific people. Don't use commas or semicolons in an attempt to apply multiple tags to a picture. Always press Enter after typing a single tag.

- To caption, click Add Caption, type a caption in the Add A Caption box, or replace the text that already appears there with a caption of your own.
- Optionally, if you want to change the date or time that the picture was taken, click the current date and time shown above the Ratings stars.

FIGURE 23.15

Info pane

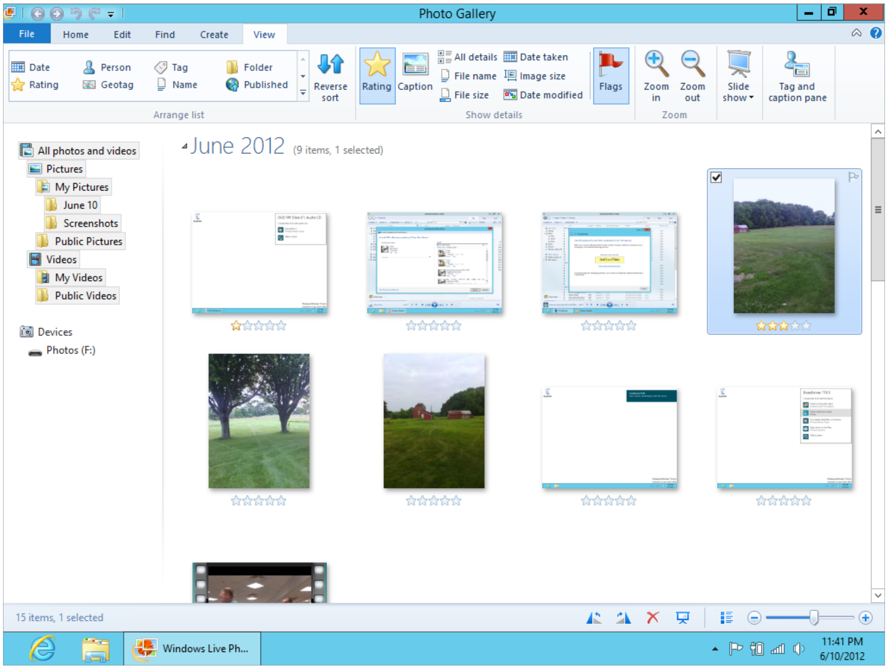


Photo Gallery
File
Home
Edit
Find
Create
View
Date
Rating
Person
Geotag
Tag
Name
Folder
Published
Reverse sort
Rating
Caption
All details
File name
File size
Date taken
Image size
Date modified
Flags
Zoom in
Zoom out
Slide show
Tag and caption pane
Arrange list
Show details
Zoom
All photos and videos
Pictures
My Pictures
June 10
Screenshots
Public Pictures
Videos
My Videos
Public Videos
Devices
Photos (F:)
June 2012 (9 items, 1 selected)
15 items, 1 selected
Windows Live Ph...
11:41 PM
6/10/2012

Filtering pictures

The coolest thing about tagging pictures is that it makes specific pictures very easy to find in the future. This is especially useful after you've accumulated hundreds or thousands of pictures, and don't want to go digging through folders to find specific ones.

To see all pictures to which you've applied a tag, right-click in the Content pane, choose Group By and then click Tag. Figure 23.16 shows an example sorted by Farm. The gallery at the top shows all photos tagged with the word "Farm"; the photos below are not tagged.

FIGURE 23.16

Viewing all pictures tagged "Farm"

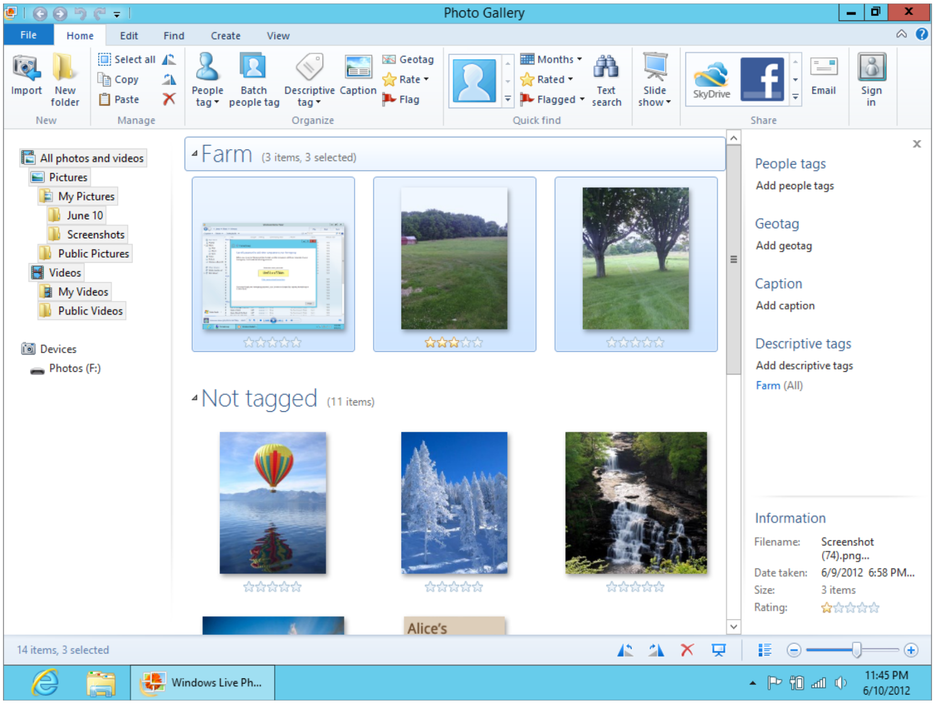


Photo Gallery
File
Home
Edit
Find
Create
View
Import
New folder
Select all
Copy
Paste
People tag
Batch people tag
Descriptive tag
Caption
Geotag
Rate
Flag
Months
Rated
Flagged
Text search
Slide show
SkyDrive
Email
Sign in
New
Manage
Organize
Quick find
Share
All photos and videos
Pictures
My Pictures
June 10
Screenshots
Public Pictures
Videos
My Videos
Public Videos
Devices
Photos (F:)
Farm (3 items, 3 selected)
Not tagged (11 items)
Alice's
People tags
Add people tags
Geotag
Add geotag
Caption
Add caption
Descriptive tags
Add descriptive tags
Farm (All)
Information
14 items, 3 selected
Windows Live Ph...
11:45 PM
6/10/2012

Filename: Screenshot (74).png...
Date taken: 6/9/2012 6:58 PM...
Size: 3 items
Rating: ★☆☆☆☆

To see pictures that contain multiple tags, use the Text Search tool. Click Find ➪ Text Search to open the Search By bar. For example, suppose you entered the word "Nature" as tags for dozens of photos. But you also entered the term "Vacation" for only three of those photos. In the Search By bar, if you type “nature vacation” and press Enter. You will see only the three photos that match both tags.

To see all pictures to which you haven’t yet applied any tags, click Find and then click the down arrow on the Tags button. Click Not Tagged near the bottom of the tag list. From there you can start adding tags to any pictures that appear in the gallery.

To see all the pictures you took in a certain year, month, or day, click the Find tab and click Dates, Months, or Years. To see all the pictures to which you’ve applied a rating (or no rating), click an option under the Rated heading.

To search for pictures or videos by name, tag, or other keyword, first click All Photos And Videos at the top of the Navigation pane. Click the Find tab, and then click Text Search and type a word in the Search box. You can also narrow the search by first clicking Pictures, Videos, a tag, a year, or whatever to reduce the number of items in the gallery. Your next search will search only within items currently in the gallery.

Changing tags

Tags are flexible. You can add, rename, and change them at will. To change the spelling of a tag, just right-click it in the Navigation pane and choose Rename. Type in the corrected name and press Enter. The spelling will automatically be corrected in every picture that contains that tag.

To delete a tag from a single picture, without removing the tag from any other pictures, first select the picture’s thumbnail. Or if you want to delete the tag from a few pictures, select their thumbnails. Then right-click the tag you want to remove and choose Delete. Note that deleting a tag does not delete any pictures. It simply removes the tag from any pictures to which you previously applied the tag.

Use a picture as your desktop background

If you have a favorite photo you’d like to use as a desktop background, right-click its thumbnail and choose Set As Desktop Background.

If you can’t see the desktop, click the Show Desktop button at the far right of the taskbar. Then click the Windows Photo Gallery taskbar button to bring Photo Gallery back onto the desktop.

See Chapter 13 for more ways to personalize your Windows desktop.

Adding pictures to Photo Gallery

Photo Gallery doesn't scan your entire hard disk for photos. By default it includes only pictures from the Pictures folder in your user account. If you have pictures in other folders, you can add them to Photo Gallery in several ways. If the pictures are in some arbitrary location where they just happened to end up, consider moving them to your Pictures folder. Use any technique described in Chapter 28 to move and copy files.

If the pictures are in some other folder for good reason, you can add that folder to Windows Live Photo Gallery. This has no effect on the pictures or the folder, so you won't mess up your existing organization. To add a folder to the Photo Gallery:

1. Click the File tab and choose Include Folder.
2. Navigate to any folder that contains pictures and videos you'd like to include in your gallery and click OK.

Repeat Steps 1 and 2 for each folder you want to add. As you add new pictures to those folders in the future, they'll show up automatically in Photo Gallery.

Use your Photo Gallery as a screen saver

To use photos in your Photo Gallery as a screen saver, click the File tab and choose Screen Saver Settings. Set the Screen Saver name to Windows Live Photo Gallery. Then click the Settings button. You can choose to show all photos and videos or narrow the selection to a specific folder. If you like, you can also narrow things down to only pictures that have a certain tag or rating, and exclude files with specific tags. You can also set the general speed of the screen saver slide show. Select Shuffle Contents to randomize the photo and video selection. Click Save after making your selections. Click Preview for a preview of how the screen saver will look. Click OK when you're happy with your selections to return to Photo Gallery.

Fixing photos

Windows Live Photo Gallery comes complete with a simple graphics editor specifically designed to work with photos. The editing tools are located on the Edit tab and you can get to it simply by clicking a thumbnail and then clicking the Edit tab (see Figure 23.17).

FIGURE 23.17

The Edit tab

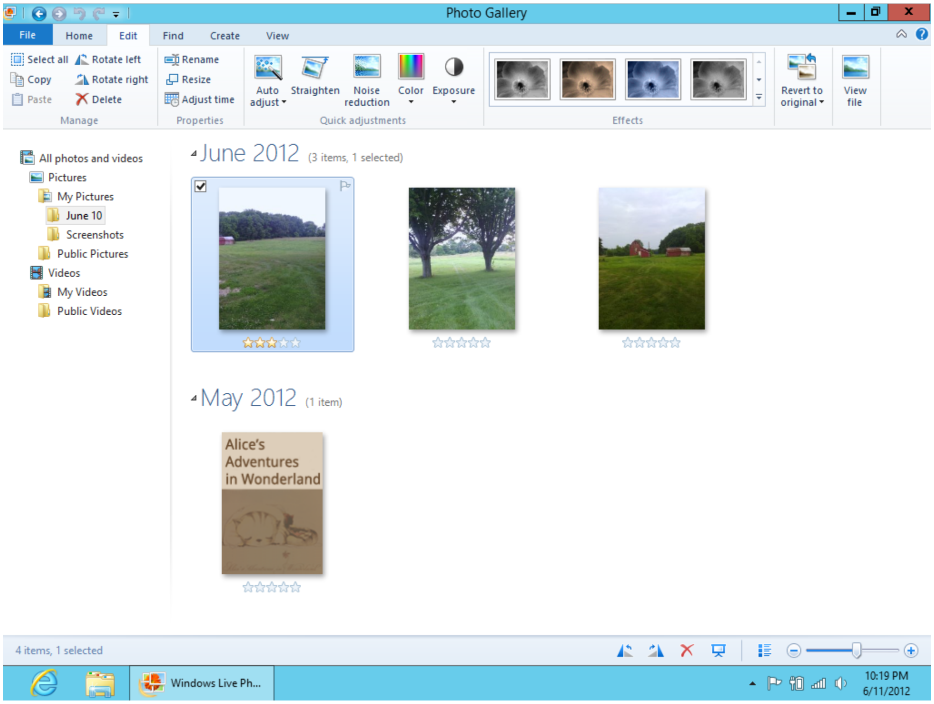


Photo Gallery
File
Home
Edit
Find
Create
View
Select all
Rotate left
Copy
Rotate right
Paste
Delete
Manage
Rename
Resize
Adjust time
Properties
Auto adjust
Straighten
Noise reduction
Color
Exposure
Quick adjustments
Effects
Revert to original
View file
All photos and videos
Pictures
My Pictures
June 10
Screenshots
Public Pictures
Videos
My Videos
Public Videos
June 2012 (3 items, 1 selected)
May 2012 (1 item)
Alice's Adventures in Wonderland
4 items, 1 selected
Windows Live Ph...
10:19 PM
6/11/2012

TIP

The Fix pane makes it easy to touch up your photos. It's a far cry from a "real" graphics editor such as Photoshop or Paint Shop Pro, but it can fix the most common photo problems.

Before you try anything, notice the Undo button at the top of the Windows Live Photo Gallery window. If you don't like the results of a change, click this button to undo the change. If you change your mind after Undo, click Redo to bring the change back. When you point to Undo and Redo after making changes to a picture, you'll see a little arrow on the button that you can click to undo only one change or all changes. The buttons are disabled (dimmed) when there's nothing to undo or redo. You also can use the Revert To Original button on the Edit tab if you want to remove all edits and return to the original photo.

The sections that follow describe several of the main tools on the Edit tab.

Auto Adjust

Click Auto Adjust to let Photo Gallery take a shot at cleaning up the brightness, contrast, and such. Don't expect miracles, however. Sometimes Auto Adjust might make things worse. If so, just click Undo.

Exposure

Click this option to adjust the brightness and contrast of the picture. The Exposure Adjustment settings are especially useful for pictures that are poorly lit. Click one of the nine predefined exposures to improve your photo. For a description of the exposure, hover the mouse pointer over an exposure to see the brightness, shadow, and highlight settings.

Color

Click Color to change the color temperature and tint. Click one of the nine predefined color adjustments to improve your photo. Temperature and tint can be defined as follows:

- **Color temperature:** The overall tone of your picture from low temperature to high.
- **Tint:** Changes the color cast in a picture by adding or removing green from your picture.

To fine-tune a photo's color, double-click the photo and then choose the Fine Tune tool on the Edit tab. In the right pane, click Adjust Color and move the Color Temperature, Tint, and Saturation sliders left or right until you get the desired color you want.

Straighten

This option straightens your photo. If you took a photo with the camera at a slight angle, use this option to straighten the photo.

Crop

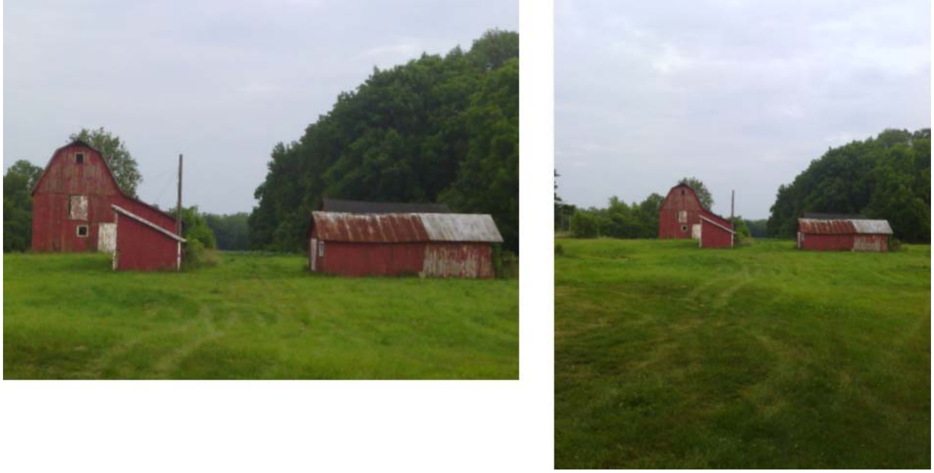
Cropping a picture lets you get rid of any unnecessary background. This is useful when the main subject of the photo looks too small or far away. Figure 23.18 shows an example. The photo on the left is a crop of the entire original photo shown on the right. The cropped photo on the left brings attention to a few features by eliminating much of the foreground.

TIP

Figure 23.18 is also a good example of why you might want to make a duplicate of the original before cropping. The photo on the left is a good photo and is worth keeping. The cropped copy on the right is good for showing one of the main subjects of the photo.

FIGURE 23.18

Original photo (right) and cropped (left)



To crop a photo, first double-click the photo you want to crop. Next click Crop on the Edit tab. A white box with sizing handles (little squares) appears on the picture. The idea is to get exactly what you want the finished photo to look like inside that box. Anything you want to crop out of the picture should be outside the box.

If you plan on printing the finished photo on pre-sized photographic paper, click the down arrow on the Crop button and click Proportion. Choose your print size. Doing so keeps the proportions of the cropping box at the proper aspect ratio the print size.

NOTE

The aspect ratio is the ratio of the width of the photo to its height. Different print sizes have slightly different aspect ratios.

Here's how you use the cropping box that's on the picture:

- To make the box larger or smaller, drag any sizing handle (little square) around the box border.
- To recenter the box around the main subject of the photo, put the mouse pointer inside the box and drag it to a better location on the picture.
- To zoom in and out while cropping, spin the mouse wheel or use the Zoom slider.

When the inside of the box looks the way you want your photo to look, click the Crop button. The picture is cropped. (If you change your mind, click Undo.)

Fix red eye

Red eye is a common problem caused by the retina at the back of the eye reflecting the flash back to the camera. Fixing it isn't too tough. First, if the eyes are very small in the photo, spin the mouse wheel or use the Zoom button to zoom in on the eyes. You may need to zoom a little, pan a little, zoom a little. The idea is to make the eyes as large as possible in the viewing area. Next, click Red Eye on the Edit tab and follow the instructions that appear there. Drag a rectangle around the pupil of the eyeball, not the entire eye. Figure 23.19 shows an example where we've dragged a rectangle around an eye.

FIGURE 23.19

Fixing red eye

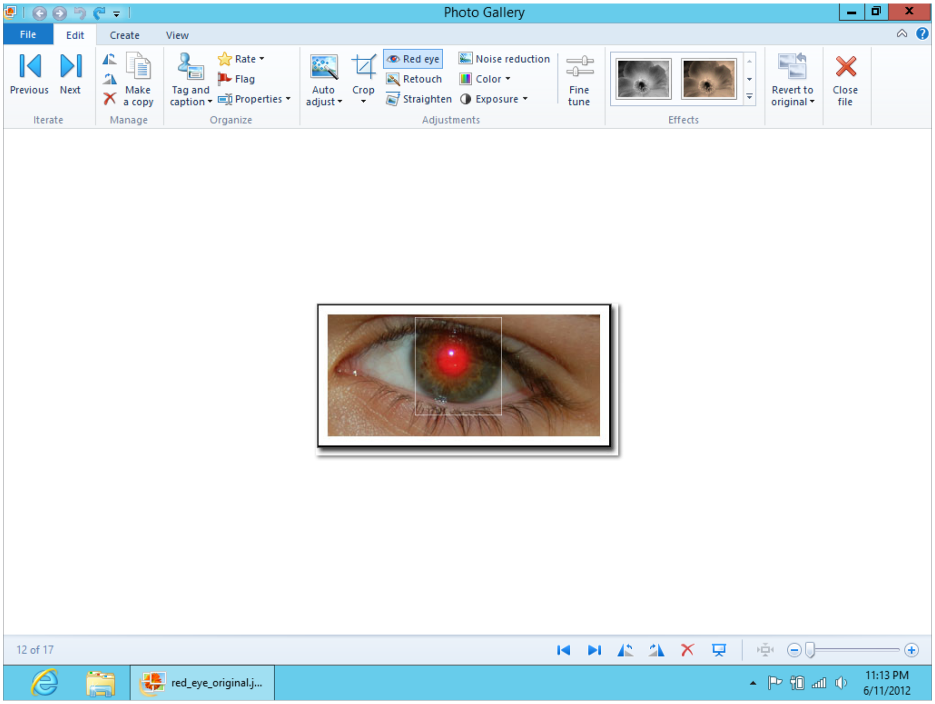


Photo Gallery
File
Edit
Create
View
Previous
Next
Make a copy
Tag and caption
Rate
Flag
Properties
Auto adjust
Crop
Red eye
Retouch
Straighten
Noise reduction
Color
Exposure
Fine tune
Revert to original
Close file
Iterate
Manage
Organize
Adjustments
Effects
12 of 17
red_eye_original.j...
11:13 PM
6/11/2012

If dragging a rectangle around the eye once doesn't fix the red eye, drag another rectangle around the same eye. Keep doing so until all of the red is gone. Then, pan over to the other eye, if necessary, and drag a square around that eye. If you don't like the results, click Undo. Then try again.

Effects

You can use the black-and-white Effects options on the Edit tab to turn your photo into a black-and-white image with no filter or a choice of orange, yellow, or red filter. Each filter gives a different result. You can also create a sepia tone or cyan tone image.

Saving changes

When you've finished touching up your photo in the Fix pane, click Close File. Your changes are saved automatically.

If you made a mess of things in the editing window, click Revert To Original to undo your previous changes.

TIP

You can recover previous versions of many different kinds of files, not just photos. If you're interested in that sort of thing, see Chapter 31 for the whole story.

Using people tags

Windows Live Photo Gallery includes a feature called *people tags* that you can use to identify people in your photos. People tags work in conjunction with Photo Gallery's face detection capability, enabling you to assign a tag to a person's face, rather than just to the photo. So instead of just adding Edna as a general tag to a photo with 20 people in it, you can assign the people tag to Great Aunt Edna's face, so you can remember who she is in that family reunion photo.

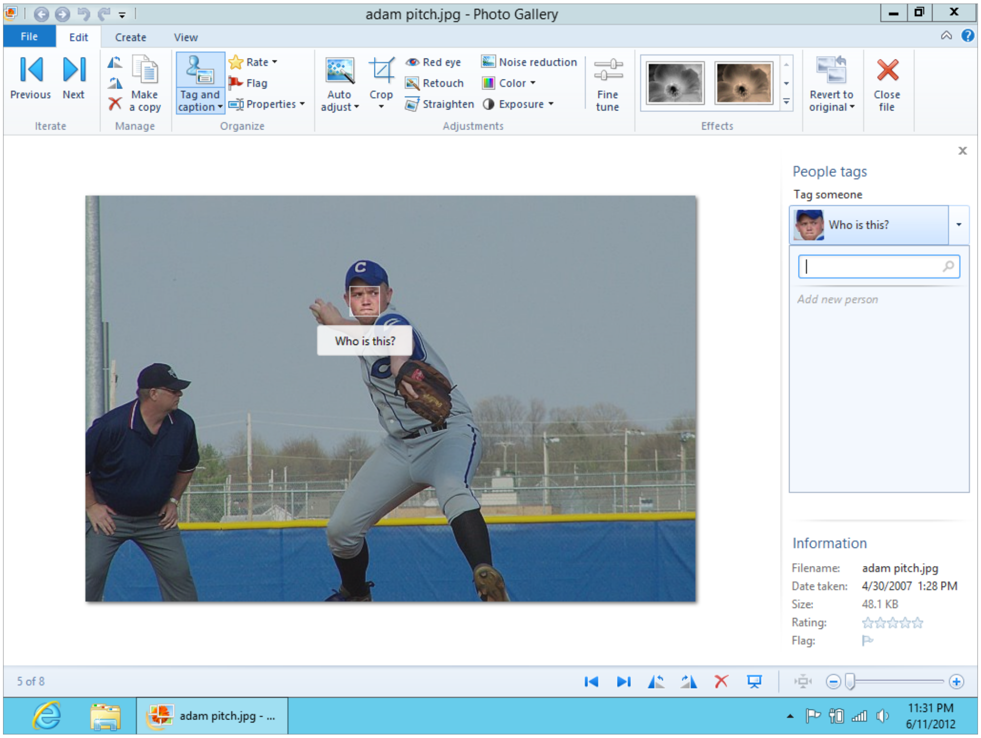
Photo Gallery's face detection capability does not equal *facial recognition*. Photo Gallery won't tag all the photos that contain Aunt Edna automatically. Instead, face detection simply enables Photo Gallery to identify faces in a picture. You can then assign tags to each face.

Assigning a people tag is easy. First, just click a photo. If Photo Gallery is able to detect faces in the photo, you'll see a People Found link in the Info pane. Click Identify, and then type the name of the person whose face is highlighted. Repeat the process for other faces in the photo.

If Photo Gallery can't detect faces in the photo, you can add the people tags manually. Double-click the photo to preview it. Then, on the Edit tab, click Tag And Caption. Windows Live Photo Gallery will draw a rectangle around a face that it finds in the photo (see Figure 23.20). In the information pane on the right, click Who Is This under the Tag Someone label. Enter the name of the person or select a name from the list of previously entered names.

FIGURE 23.20

Adding a people tag


adam pitch.jpg - Photo Gallery
File
Edit
Create
View
Previous
Next
Iterate
Make a copy
Manage
Tag and caption
Rate
Flag
Properties
Organize
Auto adjust
Crop
Red eye
Retouch
Straighten
Noise reduction
Color
Exposure
Fine tune
Adjustments
Effects
Revert to original
Close file
Who is this?
People tags
Tag someone
Who is this?
Add new person
Information
5 of 8
adam pitch.jpg - ...
11:31 PM
6/11/2012

Filename: adam pitch.jpg
Date taken: 4/30/2007 1:28 PM
Size: 48.1 KB
Rating: ☆☆☆☆☆
Flag:

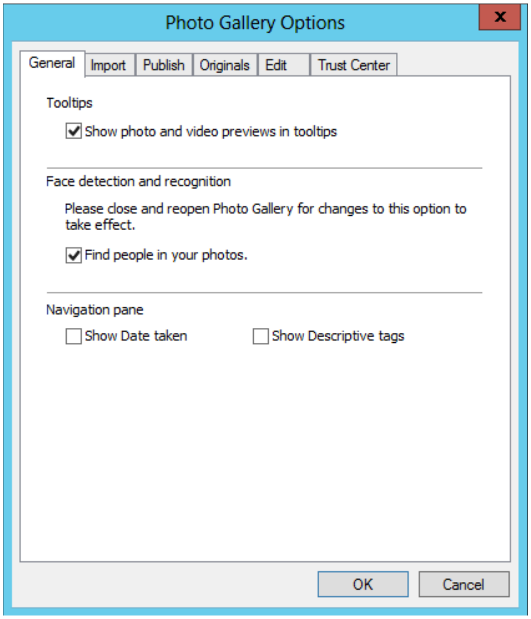
If Photo Gallery does not automatically detect a face, click the arrow on the Tag And Caption button, click People Tag ➪ Tag A Person. Drag a box around the person's face and then fill out the Tag Someone box.

Choosing Photo Gallery options

Like most programs, Windows Live Photo Gallery has an Options dialog box that lets you tweak certain program features to your own work style. To open Live Photo Gallery's Options dialog box, click the File toolbar button and choose Options. Figure 23.21 shows the Windows Live Photo Gallery Options dialog box, which contains three tabs: General, Import, and Tags.

FIGURE 23.21

Windows Live Photo Gallery options



Tooltips

☑ Show photo and video previews in tooltips

Face detection and recognition

Please close and reopen Photo Gallery for changes to this option to take effect.

☑ Find people in your photos.

Navigation pane

☐ Show Date taken ☐ Show Descriptive tags

Selecting the first option, Show Photo And Video Previews In Tooltips, ensures that when you point to a thumbnail in Photo Gallery, you see a larger version of the thumbnail or video. Clearing that check box prevents the tooltips from showing.

The Find People In Your Photos option on the General tab turns on or off face detection, described previously.

The Navigation pane options let you set to show date taken information and descriptive tags of your photos.

The Import tab lets you customize how pictures that you import to Photo Gallery are handled. You can import pictures into Photo Gallery by clicking File in its toolbar and choosing Import From Camera Or Scanner.

- **Settings For:** Specify the device or medium for which you want to define settings.
- **Import To:** Choose the folder to which pictures and videos will be imported. The default is the My Pictures folder for your user account.

- **Folder Name:** Imported pictures are automatically placed in a folder. Use this option to specify how you want that folder named. You can choose from various combinations of the following:
  - **Date Imported:** Today's date (the date on which you're performing the import).
  - **Name:** Photo or video name.
  - **Date Taken:** The date in the first picture's Date Taken property.
  - **Date Taken Range:** The Date Taken property of the first and last pictures being imported.
- **File Name:** Each imported picture is automatically assigned a filename. To use the original filename as assigned by the camera, choose Original File Name. Some digital cameras organize photos into folders. To preserve both the camera folder and filenames, choose Original File Name (Preserve Folders).
- **Open Windows Live Photo Gallery After Importing Files:** When selected, this option ensures that Windows Live Photo Gallery opens automatically as soon as you've finished importing pictures.
- **Delete Files From Device After Importing:** If selected, pictures and videos will be erased from the camera automatically after importing.
- **Rotate Photos During Import:** Some digital cameras can sense when you're holding the camera vertically and mark each such picture accordingly. Choosing this option causes those pictures to be rotated to the correct upright position automatically when imported.
- **Restore Defaults:** Sets options back to the original factory settings.

Click OK after making your selections. Your choices on the Import tab will be applied only to pictures you import in the future. They have no effect on pictures you've already imported. Of course, you can rename, rotate, tag, and move pictures at any time, regardless of settings in the Options dialog box.

The Publish tab provides options for setting file details (called metadata) that you want to include with your files. For example, you can include all file details, none, or select details that you do not want to show (such as camera information, location information, and the like).

The Originals tab has to do with the Revert button in Fix. By default, previous versions of photos stay on the hard disk permanently, even though you don't see them. After a few years, or even months, the storage space they require could be significant. Choosing Move Original Files To Recycle Bin After lets you put a time on those saved originals. You can choose from several time frames, ranging from One Day to Never.

NOTE

The Recycle Bin is much like a wastepaper basket. It holds your trash (deleted files) until you empty it. See "Deleting Files" in Chapter 28 for more information.

Keep in mind that you can't revert a modified picture to its original form, or find a previous version of a file after the time limit expires. If you consistently work with duplicates of pictures rather than originals, this isn't a big deal because you always have the original in plain sight in its folder.

Use the Edit tab to select Auto Adjust settings, including Straighten, Noise Reduction, Color, and Exposure. By selecting these items, you can tell Photo Gallery which auto adjust options to use when you click Auto Adjust on the Edit tab when editing a photo.

Microsoft includes the Trust Center tab so that you can opt to provide Microsoft with information that helps them make better products. If you select the Help Improve Windows Live option, Microsoft collects system information and data about the way in which you use their Live products. That data is then uploaded to Microsoft.

Click OK when you finish changing options.

Making movies from Photo Gallery

The Movie option on the Create toolbar button in Windows Live Photo Gallery is really just a shortcut to Windows Live Movie Maker. The idea is to get all the pictures and videos you want to put in a movie into the gallery, perhaps by giving all those items a tag and then clicking the tag name in Photo Gallery's Navigation pane. Then you select all those items and click Create ➪ Movie. Movie Maker opens with all the selected items, ready to insert into a new movie.

Printing Pictures

You can print pictures to almost any printer, although photo printers produce much better results. However, you'll need to refer to the instructions that came with that printer for specifics on connecting the printer. You might also need to install or download a special driver from the printer manufacturer. If in doubt, refer to the manual that came with the photo printer or to the manufacturer's website.

Most modern inkjet and laser printers let you print on either plain paper or photographic paper. Photographic paper is considerably more expensive, so you might want to stick with plain paper for drafts and informal prints. Use photographic paper for more formal prints of your best photos.

Printing from Windows Live Photo Gallery

If the pictures you want to print are in Windows Live Photo Gallery, you can print from there. Use the Navigation pane to display the pictures you want to print. Then select (check) the picture (or pictures) you want to print. If you want to print all the pictures showing in the gallery, you can click the group heading to select all the icons, or click any one picture in the gallery and press Ctrl+A. If you want to print only some pictures, select their icons. You can do so by pointing to any image and clicking its check box. Or you can use the universal techniques for selecting icons discussed in Chapter 28.

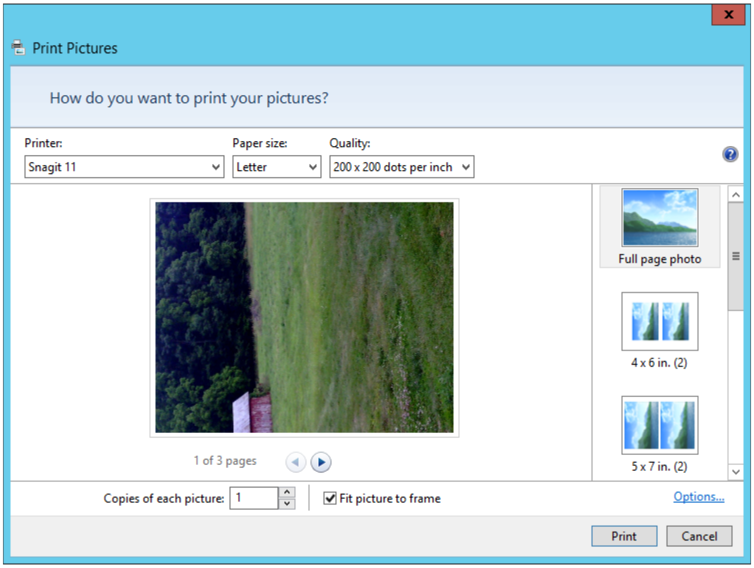
After you've selected the pictures you want to print, click File ➪ Print ➪ Print. The Print Pictures window shown in Figure 23.22 opens.

NOTE

Don't worry about sideways pictures in the Print Pictures window. You don't need to rotate them. The printed pictures will look fine even if they're sideways in the Print Pictures window.

FIGURE 23.22

Print Pictures window



Printer: Snagit 11

Paper size: Letter

Quality: 200 x 200 dots per inch

Copies of each picture: 1

☑ Fit picture to frame

Now you get to make a whole bunch of choices as to how you want to print your picture (or pictures). The choices available to you depend on what kind of printer you're using. If you have multiple printers attached to your computer, the first step is to select the printer you want to use from the Printer drop-down list.

If your printer supports multiple paper sizes, click the Paper Size drop-down and choose the size paper you want to print to. Depending on your printer, you might also be able to click the Quality drop-down and choose the output resolution. The higher the DPI, the better the quality of the print, and the longer it takes to print.

If your selected printer supports multiple paper types, click Paper Type and choose the paper you're using.

If you're printing multiple pictures on large paper, choose a layout from the right column. Use the scroll bar at the right side of the window to view all your options. Typically, you can choose any size from a full page photo down to tiny wallet-sized prints. After you scroll, be sure to click the layout you want to use. The preview area shows you how things will look on each printed page.

NOTE
If you change your mind about the pictures you selected to print, click Cancel to return to Photo Gallery.

To print more than one copy of each picture, specify how many you want to print in the Copies Of Each Picture. Choose Fit Picture To Frame to ensure that any small pictures are expanded to fill the page on which they're printed.

With all the choices made, just click Print and wait. Don't expect the printer to start right away. It takes some time for the computer to get everything together before sending it to the printer. Be patient. When your pictures are finished printing, click Finish in the window that appears.

Printing pictures from a folder

If you have pictures that don't show in Windows Live Photo Gallery, you can print them straight from the folder in which they're stored. Open the folder that contains the pictures. Then select the icons of the pictures you want to print. Be careful you don't select any icons for non-picture files, or this technique won't work.

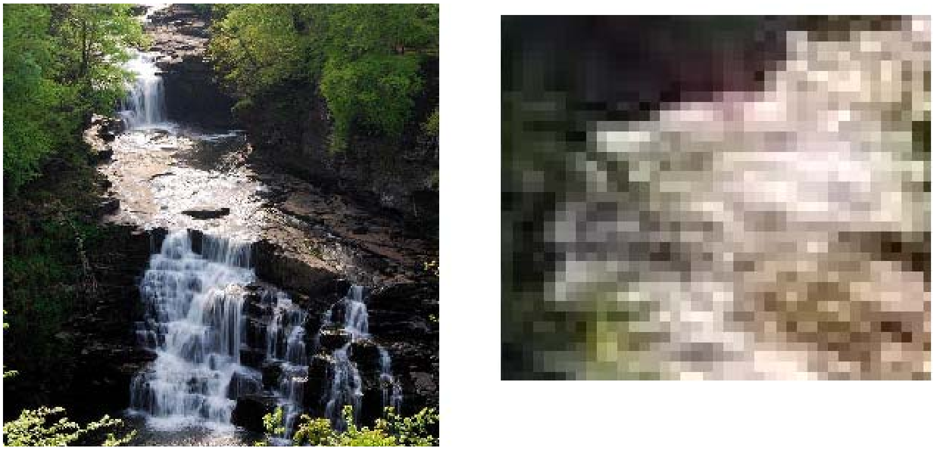
Once you've selected the picture icons, click Share ➪ Print from the toolbar. If the Print button isn't visible, first click >> at the end of the toolbar to see if it's just off the edge. If you still don't see a Print option, chances are one or more of your selected icons isn't a picture. When you do see the Print button, click it. You'll be taken to the Print Pictures window. Choose your settings, as described in the previous section, and click Print.

Pixels and Megapixels

Every picture you see on your screen is actually a bunch of little lighted dots on the screen called pixels. You don't see the individual pixels because they're too small, but if you take a small original picture and zoom way in, each pixel reveals itself as a small colored square. Figure 23.23 shows an example. The picture on the left is the original. The picture on the right is an extreme zoom in. There you can see how the picture is actually lots of pixels — little colored squares.

FIGURE 23.23

Zoomed-in to see pixels



When shopping for digital cameras, *megapixels* are a key pricing factor. A megapixel isn't one humongous pixel. It's a million regular-sized pixels. The basic rule of thumb is, the more pixels, the better the quality of the pictures. The term "quality" in this context really means how big you can make it (or print it) without the picture looking *pixelated*. A pixelated picture looks, at best, blotchy. At worst, it looks like a bunch of pixels rather than a coherent picture.

Table 23.1 provides some general guidelines on how the number of megapixels translates to print quality. You can always print any picture at any size, of course, but you start to lose quality if you go above the recommended maximum size shown in the second column. All numbers are approximate, of course, because many other factors come into play in determining overall print quality.

TABLE 23.1 Megapixels and Print Size

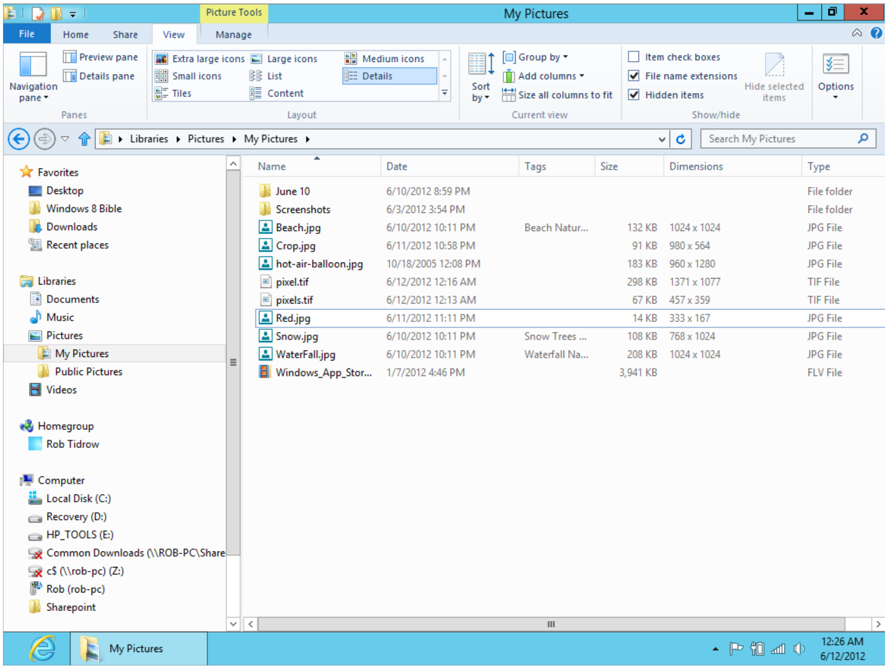
Megapixels	Recommended Maximum Print Size
1–2	3 × 5
2–3	5 × 7
3–4	8 × 10
4–5	11 × 14
>5	18 × 24

File extension, size, and dimensions

Every picture has a type, indicated by its filename extension. It also has a size measured in kilobytes (KB) or megabytes (MB). And it has dimensions. You see that information when you point to a picture's thumbnail in a folder. The Details view in a folder can show the Dimension, Size, and Type of every picture in the folder (see Figure 23.24). Right-click any column heading and choose the name of the column you want to see.

FIGURE 23.24

Viewing photo file details in File Explorer


Picture Tools
My Pictures
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Tiles
Content
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Item check boxes
File name extensions
Hidden items
Hide selected items
Options
Show/hide
Libraries
Pictures
My Pictures
Search My Pictures
Favorites
Desktop
Windows 8 Bible
Downloads
Recent places
Libraries
Documents
Music
Pictures
My Pictures
Public Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Common Downloads (\\ROB-PC\Share
c$ (\\rob-pc) (Z:)
Rob (rob-pc)
Sharepoint
My Pictures
12:26 AM
6/12/2012

Name	Date	Tags	Size	Dimensions	Type
June 10	6/10/2012 8:59 PM				File folder
Screenshots	6/3/2012 3:54 PM				File folder
Beach.jpg	6/10/2012 10:11 PM	Beach Natur...	132 KB	1024 x 1024	JPG File
Crop.jpg	6/11/2012 10:58 PM		91 KB	980 x 564	JPG File
hot-air-balloon.jpg	10/18/2005 12:08 PM		183 KB	960 x 1280	JPG File
pixel.tif	6/12/2012 12:16 AM		298 KB	1371 x 1077	TIF File
pixels.tif	6/12/2012 12:13 AM		67 KB	457 x 359	TIF File
Red.jpg	6/11/2012 11:11 PM		14 KB	333 x 167	JPG File
Snow.jpg	6/10/2012 10:11 PM	Snow Trees ...	108 KB	768 x 1024	JPG File
WaterFall.jpg	6/10/2012 10:11 PM	Waterfall Na...	208 KB	1024 x 1024	JPG File
Windows_App_Stor...	1/7/2012 4:46 PM		3,941 KB		FLV File

In Windows Live Photo Gallery, the file extension, size, and dimensions of a photo show when you point to a thumbnail or use the Details view.

A picture's dimensions are its width and height measured in pixels. As a rule, the bigger the dimensions the better, because it means you can print the picture at a very large size with no loss of quality. You can also zoom in quite far, and crop out quite a bit, and still end up with a picture that has significant detail.

Recall that the term "megapixels" refers to the number of pixels in a picture, where 1 megapixel equals a million pixels. A 5-megapixel camera will create pictures with dimensions of around 2,576 × 1,932. Multiplying those two numbers gives you the total number of pixels in the picture: 4,976,832. That's just about 5 million pixels, hence the 5-megapixel rating.

The file size is the amount of disk space required to store the picture. Bigger is better in terms of picture quality because a large file size indicates that there's lots of information in the file, which means you can print it at large sizes and zoom in on any portion of the picture without losing much clarity.

The filename extension is the picture's file type. Many types of picture files exist. Table 23.2 lists some examples. Some file types are so old or so rare you may never see one. The most commonly used picture types are TIFF, JPEG, PNG, BMP, and GIF, described next.

TABLE 23.2 **Examples of File Formats for Pictures**

Filename Extension	Format
`.art`	AOL Art file
`.bmp`	Windows Bitmap
`.cdr`	CorelDraw Drawing
`.cgm`	Computer Graphics Metafile
`.clp`	Windows Clipboard
`.cmx`	Corel Clipart
`.cut`	Dr. Halo
`.dcx`	Zsoft Multipage Paintbrush
`.dib`	Windows Device Independent Bitmap
`.drw`	Micrografx Draw
`.dxf`	Autodesk Drawing Interchange
`.emf`	Windows Enhanced Metafile

Filename Extension	Format
`.tif, .ai, .ps`	Encapsulated PostScript
`.fpx`	FlashPix
`.gem`	Ventura/GEM Drawing
`.gif`	CompuServe Graphics Interchange
`.hgl`	HP Graphics Language
`.iff`	Amiga
`.img`	GEM Paint
`.jpg, .jif, .jpeg`	Joint Photographic Experts Group
`.kdc`	Kodak Digital Camera
`.lbm`	Deluxe Paint
`.mac`	MacPaint
`.msp`	Microsoft Paint
`.pbm`	Portable Bitmap
`.pcd`	Kodak Photo CD
`.pct`	Macintosh PICT
`.pcx`	Zsoft Paintbrush
`.pgm`	Portable Greymap
`.pic`	Lotus PIC
`.pic`	PC Paint
`.png`	Portable Network Graphics
`.ppm`	Portable Pixelmap
`.psd`	Photoshop
`.psp`	Paint Shop Pro
`.ras`	Sun RasterImage
`.raw`	Raw File Format
`.rle`	Windows or CompuServe RLE
`.sct, .ct`	SciTex Continuous Tone
`.tga`	Truevision Targa
`.tif, .tiff`	Tagged Image File Format
`.wdp`	Windows Digital Photo
`.wmf`	Windows Meta File
`.wpg`	WordPerfect Bitmap or Vector

TIFF pictures

TIFF (Tagging Information File Format) is the preferred method of storing high-quality photos for printing. In fact, TIFF is widely used by the publishing industry for that very reason. TIFF files tend to be large, because they contain a lot of detailed information and generally use little or no compression to reduce file size.

JPEG pictures

Joint Photographic Experts Group (JPEG) is the most widely used photo format for photos displayed in web pages. JPEG uses compression to reduce file size while maintaining large dimensions. The compression results in some small loss of picture quality. That loss usually isn't noticeable until you zoom in very tightly on some small area within the picture.

The amount of compression applied to a JPEG can vary. In fact, many high-end graphics programs allow you to choose exactly how much compression you want when saving a picture as a JPEG. Many digital cameras save pictures as JPEGs with minimal compression to preserve picture quality while at the same time conserving some storage space on memory cards.

GIF pictures

Graphics Interchange Format (GIF) is commonly used in web pages for illustrations and animations. It's limited to 256 colors, which makes it unsuitable for photos. Photos need millions of colors and tend to look blotchy when saved in GIF format. GIF also allows for transparency and simple animations.

PNG pictures

Portable Network Graphics (PNG) format is a compressed format that's gaining popularity as a format for web pictures. Like JPEG, it supports millions of colors and is therefore suitable for photos. Like GIF, it allows for transparency and is therefore useful for creating images with a transparent background.

BMP pictures

Windows Bitmap (BMP) is an older uncompressed format that conserves picture quality at the cost of a large file size. Though once widely used in Windows, BMP is quickly becoming obsolete in favor of the more widely used TIFF and JPEG formats.

Changing a picture type or size

Sometimes you'll need to change a picture's type, perhaps so you can edit it in Photo Gallery or publish it on a website. There may also be times when you want to reduce the file size and/or dimensions of a picture to send it by e-mail or, again, to post it on a website.

You can manually create a smaller image for e-mailing without losing your original picture. This also works if you want to post a picture on a website. Just about any graphics program on the market allows you to resize a picture and save it in a different format.

If you don't have a graphics program, you can use the Paint program that comes with Windows 8.

1. Right-click the icon or thumbnail of the picture you want to reduce and choose Open With ➪ Paint. Don't be alarmed if you see only a small portion of a large picture. Paint doesn't automatically scale the picture to fit in the program window.
2. Choose File ➪ Save As and type a new name for this copy of the picture. For example, use the existing filename followed by TIFF if you're just changing the file type, or the word "Small" if you're also reducing the picture's dimensions.
3. If the picture isn't already a TIFF, JPEG, or PNG, click the current file type next to Save As Type and choose JPEG or PNG.
4. Click Save.

NOTE

TIFF is best for pictures you intend to print, but don't intend to e-mail or post on a website. JPEG and PNG are best for pictures you do intend to e-mail or post on a website for editing and printing purposes.

5. If your goal is simply to change the picture's type (such as from BMP to another format), skip to Step 10. Otherwise, continue with the following steps.
6. To reduce the picture's size, click the Resize button on the Home tab.
7. Under Resize in the Resize And Skew dialog box, enter a percent value for both Horizontal and Vertical. Make sure to use equal numbers so as not to skew or stretch the pictures. For example, to resize a 2576 × 1932 picture down to near 644 × 483, enter 25% for both Horizontal and Vertical.
8. To see the picture as it will appear on a web page or to an e-mail recipient, click the Edit tab and then click 100%. (If Paint's program window is small, double-click its title bar to maximize it to full screen.)
9. If the picture it too large or too small, press Ctrl+Z to undo your changes, and repeat Steps 6–7 until you find a size you like.
10. Close Paint (click its Close button or choose File ➪ Exit from its menu bar). If asked about saving your changes, choose Yes.

If you started from Photo Gallery, the new copy of the picture may not show up right away. You might have to close Photo Gallery and reopen it. Also, the new picture may not contain the tags that the original picture had, so you might find it in the Not Tagged category in Photo Gallery.

Pictures, Tags, and Virtual Folders

You can use the Search box in Photo Gallery to find pictures based on rating, tags, name, and other properties. Outside of Photo Gallery, you can do much more with tags and other photo properties when searching, enabling you to find and organize pictures in ways that transcend tags.

NOTE

Photos Gallery's tagging capabilities are just the tip of the proverbial iceberg in Windows 8. Tagging applies to many file types and is a key component in Windows 8's search capabilities.

For starters, you can display the Charms Bar, click Search, type in a tag name, click Files, and see icons for all pictures that contain that tag. You can right-click the picture's icon and choose Open File Location or right-click it and choose Open With, Preview, Send To, or whatever it is you want to do with that item. That's pretty cool. If you prefer, you can open your Pictures folder and use the Search box in its upper-right corner to search for a tag. That will limit the search to pictures in your Pictures folder and its subfolders.

When you search from the Search box, you can opt to search for all files or just pictures. Be sure to click the Files item under the Search box to look for pictures.

If you want to find pictures that contain two tags, separate the tags with a space. For example, a search for

```
Ashley Alec
```

searches for pictures that contain both Ashley and Alec. Use `OR` to broaden the search to find pictures that contain either Ashley or Alec, as you can see here:

```
Ashley OR Alec
```

If you need to specify your search condition more stringently, use the Search box in the upper-right corner of the Search window. For example, here's a search that finds only TIF files that contain either Ashley or Alec:

```
type:tif AND tag:(ashley OR alec)
```

Here's a search that finds all JPEG images that have `Hawaii` as a tag:

```
type:jpeg AND tag:Hawaii
```

You can still use DOS and Windows wildcard characters to search for filenames. For example, you could type

```
haw*
```

into the Filename box and click Search, or type

```
filename:haw*
```

into the Search box to find all pictures whose filenames start with `haw`.

You can save the results of any search as a virtual folder. When you open that folder, it shows all pictures that currently meet the search condition. For people who have a lot of pictures to deal with, these kinds of searches can be an extremely valuable tool. For more information on searching and virtual folders, see Chapters 29 and 30.

Wrap-Up

You can do lots of things with pictures and photos in Windows 8. You don't get the kind of power and flexibility you would with a dedicated graphics program such as Adobe Photoshop or Corel Paint Shop Pro. But nonetheless, you can perform the most basic operations such as cropping, red-eye removal, and some file type conversions with just the built-in Windows 8 tools and programs.

The following are the primary points covered in this chapter:

- To get pictures from a digital camera, connect the camera to the computer, turn it on, and choose Import.
- To get pictures from a CD or memory card, insert the card or disk and choose Import. Or open the disk or card and copy files using standard methods.
- To copy-and-paste a picture, right-click the picture and choose Copy. Then right-click at the destination and choose Paste.
- Your Pictures folder is the best place to store pictures.
- Windows Live Photo Gallery lets you organize and find photos as though they were all stored in a single folder.
- Use the Fix button in Photo Gallery to crop and improve pictures.
- Use the Print button in your Pictures folder or Photo Gallery to print pictures.
- Large photos are good for printing and editing. Smaller, compressed photos are best for e-mail and web publishing.

CHAPTER

24

Making Music with Media Player

IN THIS CHAPTER

Playing music with Media Player

Copying CDs to your PC

Using your Media Library

Creating your own music CDs

Copying songs to portable players

Using your computer to collect, manage, and play music is a lot of fun. You can build up a collection of all your favorite songs, make custom CDs from those songs, or copy them to a portable MP3 player. You can use your computer as a stereo to play any songs you like in any order you like. If your computer is part of a network, you can share songs and play them on any computer that's in the network.

Windows 8 comes with two programs and one Windows 8 app for collecting and playing music. One program is Windows Media Player, which we discuss in this chapter. The other program is Media Center (not included with all editions of Windows 8). If you prefer to use Media Center, see Chapter 26, "Using Media Center." To learn more about the Windows 8 Music app, read Chapter 37, "Adding and Managing Windows 8 Applications."

Controlling Sound Volume

Before we get into Windows Media Player, you need to know a few things up front about music and video. In particular, you want to get your sound working and under control, so you can listen to whatever you like, without blasting your eardrums out!

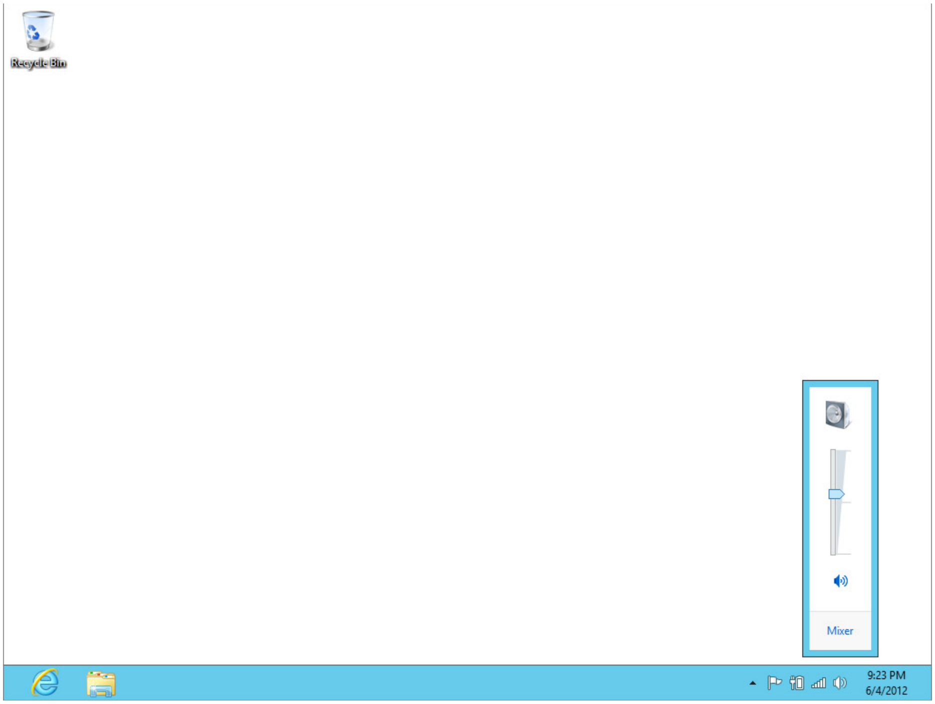
Before you get started, make sure that you can control the volume of your speakers. At any given time, you're likely to have at least three volume controls available to you. Whichever control is set the lowest wins, in the sense that it puts an upper limit on the other volume controls.

If you have powered speakers, you need to make sure that the speakers are plugged in and turned on and connected to the Speaker output jack on your computer. If the speakers have a Mute button, make sure that it's turned off. If the speakers have a volume control button, that needs to be turned up.

You can control the volume of sound coming from your computer's speakers using the Volume Control icon in the Notification area. It looks like a little speaker with sound waves coming out. Pointing to that icon shows the current volume setting as in the left side of Figure 24.1. Clicking that icon displays a volume control slider and a Mute button, as in the right side of Figure 24.1.

FIGURE 24.1

Volume control icon and slider



To adjust the volume, just drag the slider handle up or down the bar. To mute the sound, click the Mute button at the bottom of the slider. When the sound is muted, the icon shows a little red international No symbol (circle and slash) and no sound comes from your computer. To get the sound back, click the Mute button a second time.

TIP

If you don't see a speaker icon in your Notification area, chances are it's just hidden. Follow these steps to bring it out of hiding:

1. Right-click the clock or any blank area in the Notification area and choose Customize Notification Icons.
2. Locate Volume in the Icons list, and choose Show Icon and Notifications from the drop-down list.
3. Click OK.

Now you should have a speaker icon in your Notification area. Click it to see the volume control slider and Mute button. To ensure that you can hear any music you play, make sure the sound isn't muted and that the volume isn't turned down too low to hear.

With your speakers and volume control slider under control, you're ready to start using Media Player for Music.

TIP

If you have multiple sound cards and can't get any sound, make sure the default sound card is the one that's connected to the speakers. Display the Charms Bar, click Search, type **sou**, click Settings, and click Sound (or open the Sound applet from Control Panel). On the Playback tab, click the icon of the sound card you're using and click Set Default. If both sound cards have speakers attached, you can configure each to act as the default for different types of audio using the down arrow next to the Set Default button.

Starting Windows Media Player

To start Windows Media Player, use whichever method is easiest for you:

- Display the Charms Bar, click Search, type **med**, and choose Windows Media Player.
- Open any music file for which Windows Media Player is the default program.

The first time you open Windows Media Player, it takes you through a series of steps asking for your preferences. Don't worry if you don't know how to answer some questions. You can change your answer at any time. So if you see a window titled "Welcome to Windows Media Player" and don't know what to do, just click Recommended Settings and then click Finish. You can change settings at any time, so you're not making any settings permanent by accepting the suggested defaults.

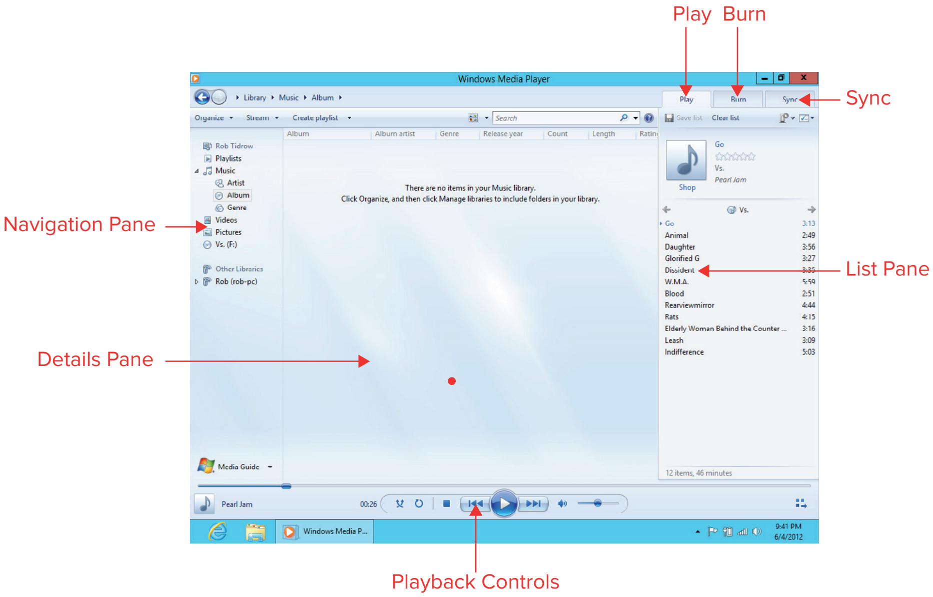
Media Player program window

Like most programs, Windows Media Player opens in its own program window and has a taskbar button. The player can have many different appearances. Exactly how it looks at any time is up to you. You'll see different ways to display things in a moment. For now, we need to cover the names of things so you know what we're talking about in the sections that follow.

Figure 24.2 points out the major components of Media Player's Player Library program window.

FIGURE 24.2

Major Media Player components


Play
Burn
Sync
Navigation Pane
List Pane
Details Pane
Playback Controls
Windows Media Player
Library
Music
Album
Organize
Stream
Create playlist
Search
Save list
Clear list
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Vs. (F:)
Other Libraries
Rob (rob-pc)
Media Guide
Pearl Jam
00:26
12 items, 46 minutes

There are no items in your Music library.
Click Organize, and then click Manage libraries to include folders in your library.

The Features taskbar across the top of the program window represents different areas of Media Player, each of which helps you perform a specific task. In Figure 24.2, the Play tab is selected. Here's a quick summary of the program components and what each tab offers:

- **Navigation pane:** Takes you to your collection of songs and other media files.
- **Details pane:** Shows details for the currently selected library, album, genre, video, and so on.
- **List pane:** Shows information about the current playlist and item.

- **Playback controls:** Provides controls for playing the currently selected media, and for switching to Now Playing mode.
- **Play:** Shows the movie or video you're currently watching or song that is currently playing (if any). You can also rip (copy) CDs to your computer.
- **Burn:** This tab lets you create custom CDs from songs in your media library.
- **Sync:** Use this tab to copy songs and other media files to a portable media player.

The toolbar

The Media Player toolbar gives you quick access to frequently used commands and options. The buttons in the toolbar change depending on what you have selected at the moment. The following list summarizes the available buttons:

- **Organize**: Manage your media libraries, sort media, customize the Navigation pane, change the Player Library layout, and access Media Player options.
- **Stream:** Enable Internet access to your home media and turn on media streaming, which allows you to send your media to other computers on the local network or the Internet.
- **Create Playlist:** Create a playback list (playlist) of media so you can play the selected items as a group. For example, you might create a playlist called My Top 100 that contains 100 of your favorite songs.
- **Rip CD:** Copy music from a CD to your media library on your computer so you can play it from your computer and optionally share it.
- **Rip Settings:** Specify settings to control the way Media Player rips music from CDs to your computer.
- **View Options:** Choose between Icon, title, and Details views for the List pane.
- **Search:** Search for media in your library.
- **Help:** Open Media Player's Help content.

TIP

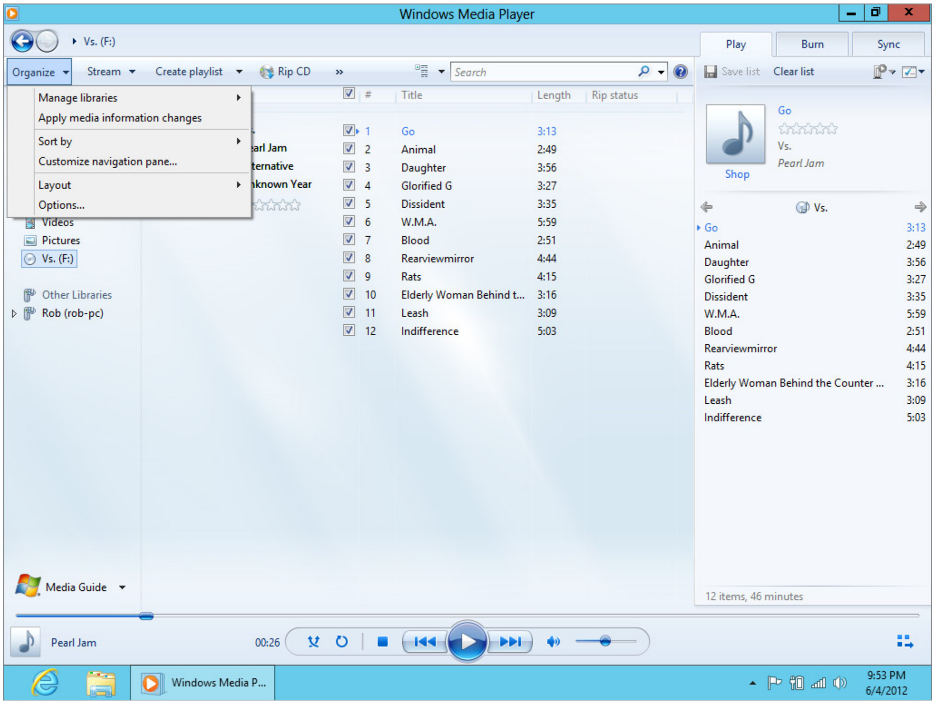
Rip CD and Rip Settings only appear in the toolbar if an audio CD is inserted in the drive.

Media Player menus

Media Player has lots of menus. They're hidden from view most of the time, but they're also easy to get to. Many of the toolbar buttons have their own menu. You'll see a little down-pointing triangle at the right of the button if it offers commands. Get the tip of the mouse pointer right on that little triangle and click the left mouse button to see the menu for that taskbar button. In Figure 24.3, for example, you can see the menu for the Organize button.

FIGURE 24.3

Organize menu


Windows Media Player
Vs. (F:)
Play
Burn
Sync
Organize
Stream
Create playlist
Rip CD
Search
Save list
Clear list
Manage libraries
Apply media information changes
Sort by
Customize navigation pane...
Layout
Options...
arl Jam
ternative
known Year
Videos
Pictures
Vs. (F:)
Other Libraries
Rob (rob-pc)
Media Guide
Go
Vs.
Pearl Jam
Shop
Vs.
12 items, 46 minutes
Pearl Jam
00:26
Windows Media P...
9:53 PM
6/4/2012

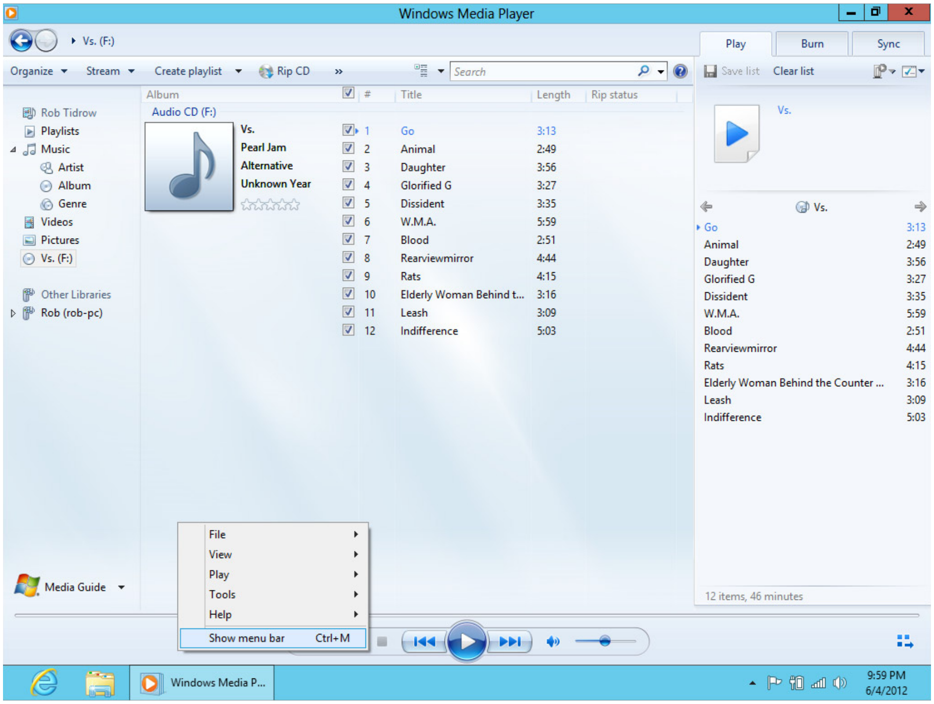
☑	#	Title	Length	Rip status
☑	1	Go	3:13	
☑	2	Animal	2:49	
☑	3	Daughter	3:56	
☑	4	Glorified G	3:27	
☑	5	Dissident	3:35	
☑	6	W.M.A.	5:59	
☑	7	Blood	2:51	
☑	8	Rearviewmirror	4:44	
☑	9	Rats	4:15	
☑	10	Elderly Woman Behind t...	3:16	
☑	11	Leash	3:09	
☑	12	Indifference	5:03	

Go	3:13
Animal	2:49
Daughter	3:56
Glorified G	3:27
Dissident	3:35
W.M.A.	5:59
Blood	2:51
Rearviewmirror	4:44
Rats	4:15
Elderly Woman Behind the Counter ...	3:16
Leash	3:09
Indifference	5:03

To see the main menu, right-click an empty area near the play controls, as at the bottom of Figure 24.4. Optionally, you can right-click an empty spot on the left or right side of the features taskbar to get to the same menu. To make those same options visible in a menu bar, choose Show Menu Bar from the bottom of that main menu.

FIGURE 24.4

Media Player play controls


Windows Media Player
Vs. (F:)
Play
Burn
Sync
Organize
Stream
Create playlist
Rip CD
Search
Save list
Clear list
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Vs. (F:)
Other Libraries
Rob (rob-pc)
Media Guide
File
View
Play
Tools
Help
Show menu bar Ctrl+M
Album
Audio CD (F:)
Vs.
Pearl Jam
Alternative
Unknown Year
12 items, 46 minutes
Windows Media P...
9:59 PM
6/4/2012

#	Title	Length	Rip status
☑ 1	Go	3:13	
☑ 2	Animal	2:49	
☑ 3	Daughter	3:56	
☑ 4	Glorified G	3:27	
☑ 5	Dissident	3:35	
☑ 6	W.M.A.	5:59	
☑ 7	Blood	2:51	
☑ 8	Rearviewmirror	4:44	
☑ 9	Rats	4:15	
☑ 10	Elderly Woman Behind t...	3:16	
☑ 11	Leash	3:09	
☑ 12	Indifference	5:03	

Play controls

The play controls (also called the *playback controls*) are at the bottom of Media Player's program window (see Figure 24.4). They work only when you're playing a song or video or have selected something to play. They work much like the controls on a VCR, stereo, or DVD player. The exact role of each button varies slightly with the type of content you're viewing. Here's what each of the play controls offers:

- **Seek bar:** When content is playing, a green indicator moves along the seek bar. You can click anywhere along the seek bar to jump forward or backward in the playing item. When you point to the end of the green indicator, a button appears. You can drag that button left or right to move back or forward within the item that's playing.
- **Shuffle:** When selected, multiple songs from the current playlist are played in random order. When turned off, songs from the playlist are played in the same order as in the playlist.

- **Repeat:** When turned on, the same song or playlist plays repeatedly. When turned off, the song or playlist plays only once.
- **Stop:** Stops whatever is playing and rewinds to the beginning.
- **Previous:** Skips back to the previous song in the playlist or DVD chapter. Or, if you point to the button and hold down the left mouse button, plays the current item backwards in fast motion.
- **Play/Pause:** When content is playing, you can click this button to pause playback. Click again to resume playback.
- **Next:** Skips to the next song in the playlist or next chapter on a DVD. Point to this button and hold down the left mouse button to fast forward through the content that's playing.
- **Mute:** Click to mute playback sound. Click a second time to hear the sound again.
- **Volume:** Drag the handle left or right to increase or decrease the volume.
- **Now Playing:** Switches to Now Playing mode, a simplified version of the Media Player window. Also useful when you want to see a video or DVD played at full-screen size. Once in the full-screen mode, right-click anywhere on the screen and choose Exit Full Screen to return to the Player Library window. Or, click Switch To Library to return to the Player Library window.

Other items in the Features taskbar are discussed later in this chapter. For now, let's stick with some of the basics of using Media Player's program window.

Closing/minimizing Windows Media Player

You can close Windows Media Player as you would any other program:

- Click the Close (X) button in the upper-right corner of Media Player's program window.
- Right-click the toolbar at the top of the window, choose File ➪ Exit from Media Player's menu.
- Right-click Media Player's taskbar button and choose Close.
- If Media Player is in the active window, press Alt+F4.

When you close Media Player, it stops playing.

If you want to continue to listen to music, but want Media Player off the screen, minimize Media Player's program window. Use any of the following techniques to minimize Media Player's program window:

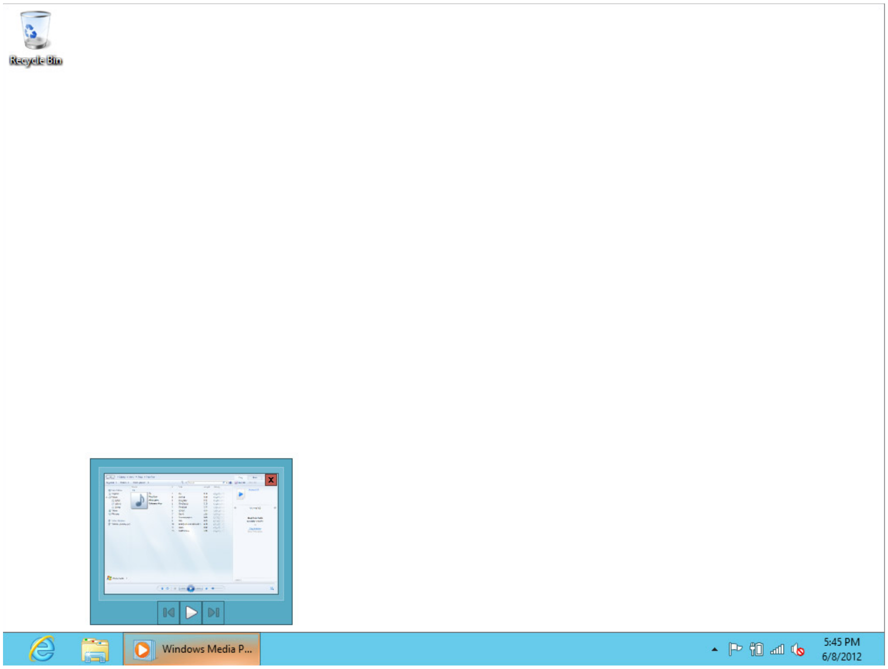
- Click the Minimize button in Media Player's title bar.
- Right-click Media Player's title bar and choose Minimize.
- Right-click Media Player's taskbar button and choose Minimize.

In Windows 7, the Media Player icon appeared on the Windows taskbar by default, even if the program was not running. For Windows 8, however, you have to launch the program from the Search tool or by finding it on the Apps window. To do this, show the Charms Bar, click Search, and type **Media**. Click Windows Media Player to launch it.

If Media Player is running, pointing to it on the taskbar displays a preview window as shown in Figure 24.5. You can click the controls at the bottom of the preview to play, stop, or skip forward or back in the playlist. Click the small preview window or the taskbar icon to open Media Player.

FIGURE 24.5

Media Player on the Windows taskbar



That should be enough to get you started using Media Player. Next, you look at various ways in which you can use Media Player to listen to music or watch videos.

Listening to a CD

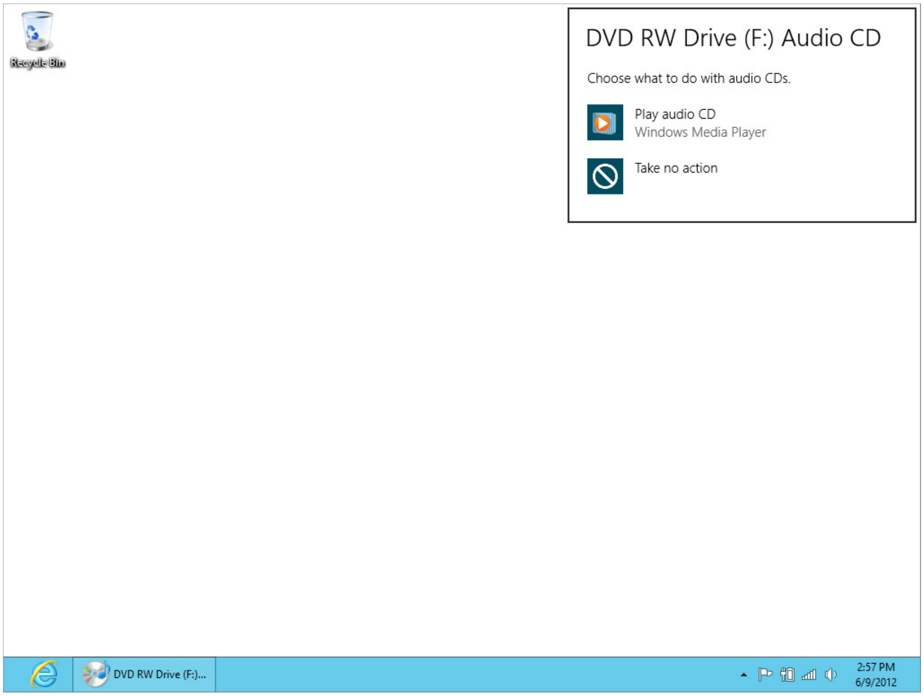
A *music CD* (also called an *audio CD*) is the kind of CD you normally play in a stereo or CD player. Typically, you buy these at a music store. As you learn later in this chapter, you can also create your own custom music CDs.

To listen to a music CD, just put it in your CD drive, label side up, and close the drive door. Then wait a few seconds. Windows Media Player might open and start playing the CD automatically. However, other things could happen:

- **A Windows message asks what you want to do:** If you see a dialog box like the example in Figure 24.6, click Play Audio CD Windows Media Player. You also have the option of clicking Take No Action if you do not want Windows Media Player to play your CD.
- **Nothing happens:** If absolutely nothing happens after you insert an audio CD, or if some other program opened and you closed it, start Windows Media Player. From Windows Media Player's Play menu (right-click the Media Player toolbar), choose Play VCD or CD Audio.
- **Windows Media Player opens:** If Windows Media Player opens and starts playing the song, you don't have to do anything else. Just continue reading on.

FIGURE 24.6

Dialog box asking about a music CD.



DVD RW Drive (F:) Audio CD

Choose what to do with audio CDs.

Play audio CD
Windows Media Player

Take no action

After the CD starts playing, you should be able to hear it (assuming your speakers are properly connected and not turned down too far). Use the Volume slider in the play controls to adjust the volume of the music.

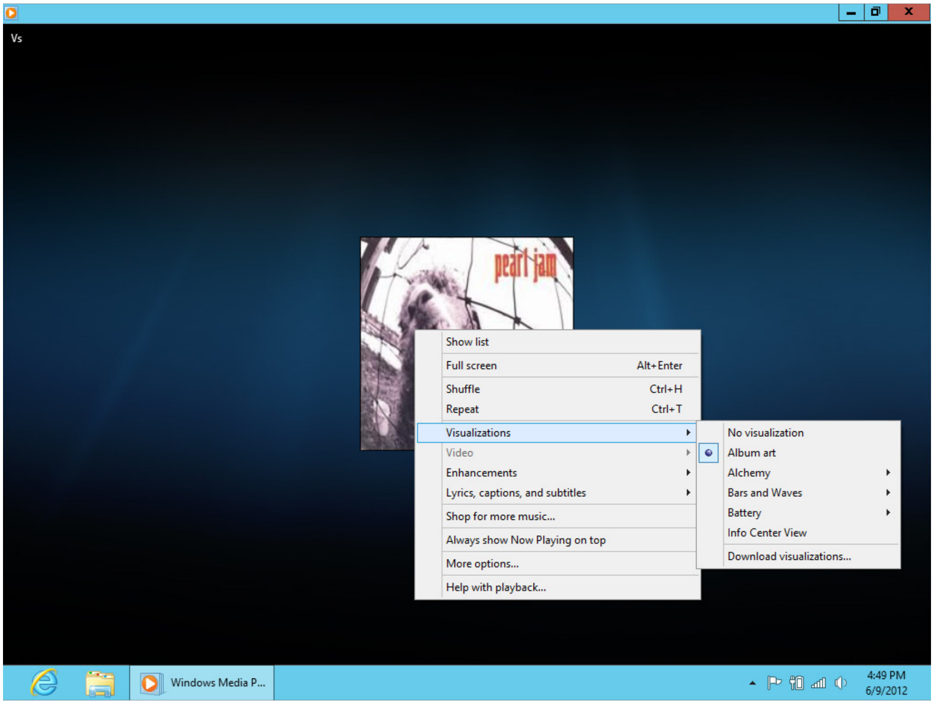
Now Playing, Visualizations, and Enhancements

When music is playing, Media Player by default shows the album art, if available, in the Now Playing window. However, you can instead watch a *visualization* of the music. The visualization is a pattern of colors and shapes that change in rhythm to the music. Media Player offers many visualizations from which to choose.

To try a different visualization, first make sure that you're viewing the Now Playing window (press Alt and choose View ➪ Now Playing). Then right-click in the Now Playing window, choose Visualizations, and then choose an option from the resulting cascading menu (see Figure 24.7).

FIGURE 24.7

Choosing a visualization


Vs
pearl jam
Show list
Full screen Alt+Enter
Shuffle Ctrl+H
Repeat Ctrl+T
Visualizations
Video
Enhancements
Lyrics, captions, and subtitles
Shop for more music...
Always show Now Playing on top
More options...
Help with playback...
No visualization
Album art
Alchemy
Bars and Waves
Battery
Info Center View
Download visualizations...
Windows Media P...
4:49 PM
6/9/2012

Regardless of which method you use, you'll see a menu of visualization names. Clicking a name displays a submenu of still more visualizations. Just pick any one to see how it looks. Go ahead and try a bunch while a song is playing to find one you like.

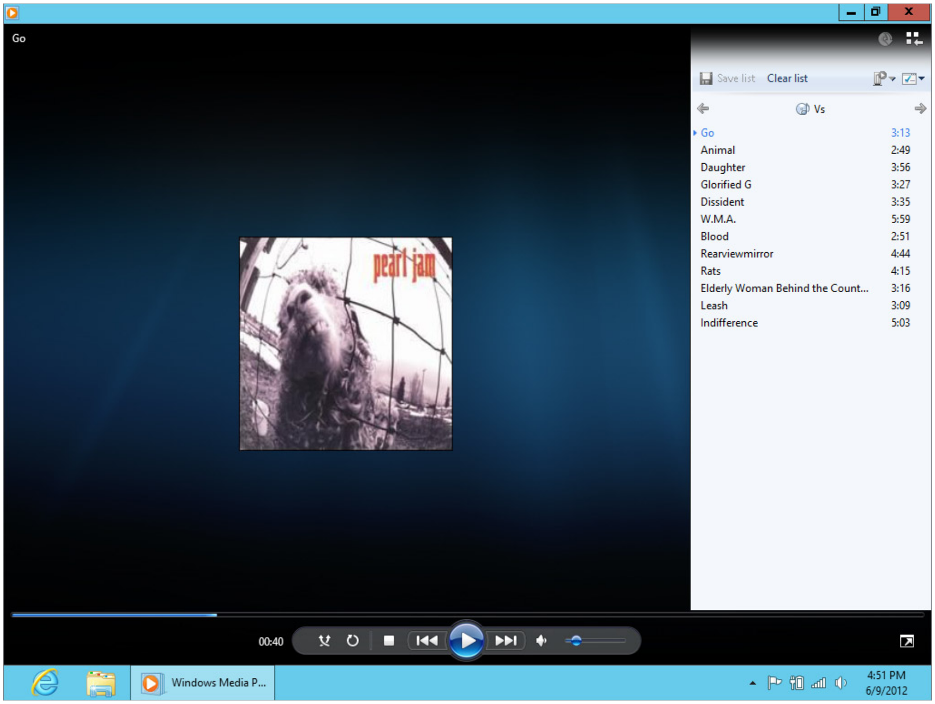
TIP
You can download plenty of visualizations for free. Right-click in the Now Playing window and choose Visualizations ➪ Download Visualizations.

Using the playlist in Now Playing view

When you're playing a music CD in Now Playing view, the playlist pane to the right of the visualization (see Figure 24.8) shows songs from the CD. That pane is optional. To show or hide that pane, right-click in the Now Playing window and choose Show List.

FIGURE 24.8

Playlist pane on right side of window



Go	3:13
Animal	2:49
Daughter	3:56
Glorified G	3:27
Dissident	3:35
W.M.A.	5:59
Blood	2:51
Rearviewmirror	4:44
Rats	4:15
Elderly Woman Behind the Count...	3:16
Leash	3:09
Indifference	5:03

In the Playlist pane, you might see the song titles, as in Figure 24.8. Or you might just see more generic names such as Track1, Track2, and so forth. Many CDs don't have song titles stored on CD, so the song titles have to be downloaded from the Internet. You'll see song titles only if they are available on the CD or have been downloaded from the Internet.

NOTE
Song titles are a form of media information. We discuss how all of that works in the section "Options for ripping CDs" later in this chapter.

If you want to listen to a specific song on the CD, just double-click its title in the Playlist pane, or use the Previous and Next buttons in the play controls to highlight the song you want to listen to.

To change the width of the Playlist pane, get the tip of the mouse pointer right on the left border of the pane, so the mouse pointer turns to a two-headed arrow. Then drag left or right.

Using Enhancements

While you're listening to music and are in the Now Playing area, you can also use Enhancements to adjust the sound and perform other tasks. The many Enhancements windows are invisible until you open them.

To show or hide Enhancements, right-click in the Now Playing window and choose Enhancements. Or, press Alt to open the menu bar, and then choose View ➪ Enhancements from Media Player's menu. When the Enhancements menu is open, you can choose which type of enhancement you want to see. Your options are summarized here:

- **Crossfading And Auto Volume Leveling:** When Crossfading is turned on, one song gradually fades out while the next song fades in. Auto Volume Leveling keeps songs at roughly equal volumes.
- **Graphic Equalizer:** Adjust the relative strengths of low, middle, and high tones. Optionally, click Default and choose a music type such as Rock or Classical. Click Reset to return to the default settings.
- **Play Speed Settings:** Use this to adjust the play speed of content. This option only works when playing `.wma`, `.wmv`, `.wm`, `.mpe`, and `.asf` files. Careful with this one. You don't want all your albums sounding like The Chipmunks!
- **Quiet Mode:** Adjusts the audio dynamic range of music (the difference between the loudest and softest sounds). You'd most likely use this option when listening to headphones or watching a movie in Media Player.
- **SRS WOW Effects:** When activated, SRS WOW effects add depth to your music. This one is definitely worth turning on and trying out if you have good speakers attached to your system.
- **Video Settings:** Adjust the brightness, contrast, hue, saturation, and size of video when viewing a movie or video in Media Player.

The selected Enhancements appear in a separate window. You can cycle through the various Enhancements options by clicking the Next or Previous buttons in the upper-left corner of the Enhancements window.

TIP

You can resize the Enhancements window as needed. Click the red X icon to close the window.

Stopping a CD

When you've finished listening to a CD, click the Stop button in the play controls. To eject the CD, choose Play ➪ Eject from Media Player's menu, press Ctrl+J, or push the Eject button on your CD drive.

Play CDs automatically with Media Player

If you want to ensure that Media Player opens and plays music CDs automatically, you need to make Media Player the default player for CDs. Here's how:

1. Press Windows+X and choose Control Panel.
2. Click Hardware and Sound.
3. Click AutoPlay.
4. Next to Audio CD, choose Play Audio CD (Windows Media Player).
5. Click the Save button.
6. Close Control Panel.

From that point on, whenever you put a music CD in your CD drive, Windows Media Player should open and play the CD automatically.

TIP

Here's a shortcut to the AutoPlay options: Show the Charms Bar, click Search, and type **auto**. Click Settings and choose AutoPlay from the Settings window.

Ripping (Copying) Music CDs

Media Player isn't just about playing CDs. The real idea is to build up a library of digital media on your hard drive, from which you can create custom playlists and music CDs. If you already own some music CDs, *ripping* a few CDs will be a great way to start creating your personal media library. Though the term "rip" might sound like something bad, it's not. It simply means to "copy," and no harm will come to the CD when you rip songs from it to your media library.

When you rip a CD, you store a copy of each song from the CD on your hard drive. That song is in a format that's more suitable for computers than the song that's on the CD.

You can put the original CD back in its case, and leave it there so it doesn't get scratched up. Play the songs straight from your PC, or make your own CDs to play the songs in a stereo. Keep the original CD as a backup in case you accidentally delete some songs you've copied.

Ripping CDs is easy, as you'll see. But you need to make a few decisions up front, such as where you want to put the songs, how you want them titled, what format you want them stored in, and so forth. The sections that follow look at all of your options.

Options for ripping CDs

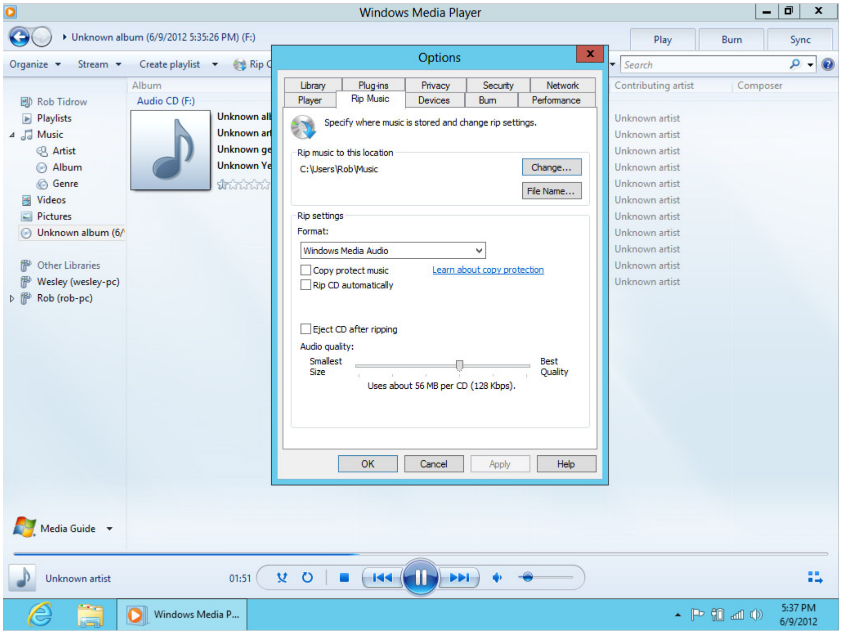
To choose options for how you want to copy CDs to your hard disk, use the Rip Music tab in Media Player's Options dialog box. To get to those options:

1. Open Windows Media Player (if it isn't already open).
2. Insert an audio CD in the drive and click the drive in the Library pane so that the Rip and Rip Settings buttons are available in the toolbar. Then, choose More Options to open the Rip Music tab of Media Player's Options dialog box.

You're taken to the Rip Music tab in Media Player's Options dialog box, as shown in Figure 24.9.

FIGURE 24.9

Rip Music tab in Media Player's Options dialog box



Specify where music is stored and change rip settings.

Rip music to this location: C:\Users\Rob\Music

Rip settings

Format: Windows Media Audio

☐ Copy protect music

☐ Rip CD automatically

☐ Eject CD after ripping

Audio quality: Uses about 56 MB per CD (128 Kbps).

Windows Media Player
Unknown album (6/9/2012 5:35:26 PM) (F:)
Play
Burn
Sync
Organize
Stream
Create playlist
Rip CD
Search
Album
Audio CD (F:)
Contributing artist
Composer
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Options
Library
Plug-ins
Privacy
Security
Network
Player
Rip Music
Devices
Burn
Performance
Change...
File Name...
Learn about copy protection
Smallest Size
Best Quality
OK
Cancel
Apply
Help
Unknown artist
01:51
Windows Media P...
5:37 PM
6/9/2012

The following sections describe what each option offers. Note that you don't need to make selections from the dialog box for every CD you copy. Rather, you choose your options once. All CDs that you copy from that point forward will use whatever settings you chose.

Choosing where to put songs

By default, all songs you copy from CD are placed in your Music folder. That's a perfectly fine place to put them, but there's no rule that says you have to put them there. You can store them in any folder you want. For example, you might put them in the Public Music folder if you want everyone who uses the PC to access the songs. Or, if you have multiple hard drives, you can put them in a folder on some drive other than C.

NOTE

If you're not very familiar with the concepts of drives and folders, don't worry about it. Just leave the Rip Music To This Location setting alone. Your songs end up in your personal Music folder. Note that whatever folder you choose is referred to as the *rip music folder* in Media Player options.

To choose a drive and folder for storing CDs, click the Change button in the dialog box. Then navigate to the drive and folder in which you want to store the songs. For example, if you want to put the songs in your Public Music folder, expand the Computer, Local Disk (C:), Users, and Public folders, and click Public Music. Then click OK.

The path in the dialog box shows where the songs will be stored. For example, in Figure 24.9 the path `C:\Users\Rob\Music` tells you that the songs will be stored in the personal Music folder for the user account named Rob. (C: is the hard disk and `Users` is the name of the folder in which all user accounts are stored.)

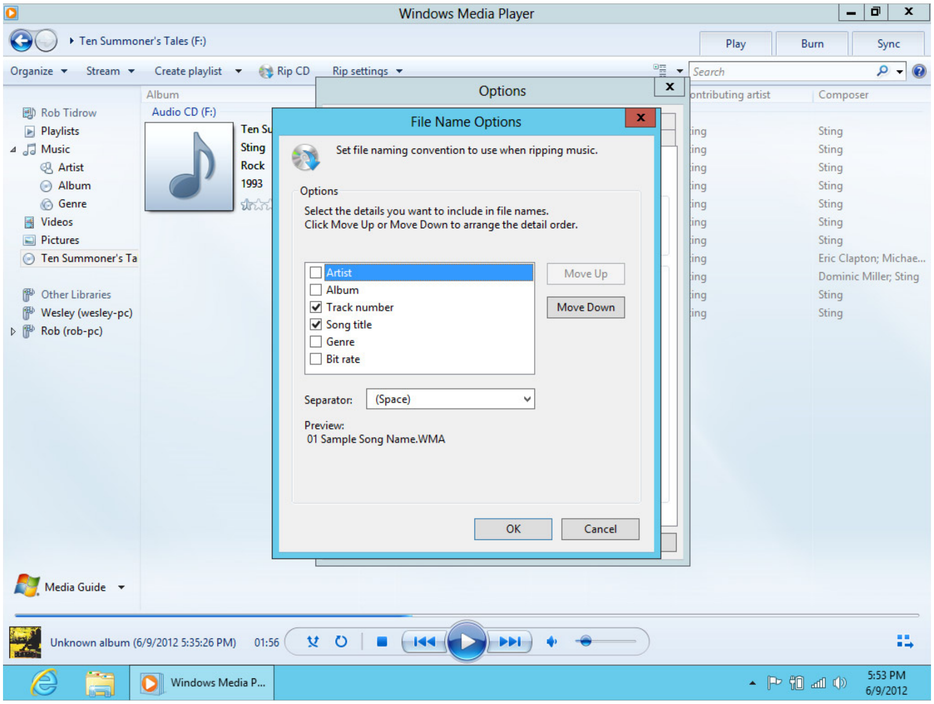
Choosing how to name files

Each song you copy from a CD is stored as a file. Like all files, each song will have a filename. Windows Media Player names the files automatically, based on the track number, song title, and other media information.

How you name the songs is entirely up to you, and won't affect how they play. The default filename is the CD track number followed by the song name. You might prefer to have the song name first. To make your selections, click the File Name button on the Rip Music tab of the dialog box. The File Name Options dialog box, shown in Figure 24.10, opens.

FIGURE 24.10

The File Name Options dialog box


Windows Media Player
Ten Summoner's Tales (F:)
Play
Burn
Sync
Organize
Stream
Create playlist
Rip CD
Rip settings
Search
Album
Audio CD (F:)
Contributing artist
Composer
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Ten Summoner's Ta
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Ten Su
Sting
Rock
1993
Sting
Eric Clapton; Michae...
Dominic Miller; Sting
Options
File Name Options
Move Up
Move Down
OK
Cancel
Media Guide
Unknown album (6/9/2012 5:35:26 PM)
01:56
Windows Media P...
5:53 PM
6/9/2012

Set file naming convention to use when ripping music.

Options

Select the details you want to include in file names.
Click Move Up or Move Down to arrange the detail order.

☐ Artist
☐ Album
☑ Track number
☑ Song title
☐ Genre
☐ Bit rate

Separator: (Space)

Preview:
01 Sample Song Name.WMA

Choose the elements you want to use in each song's filename. At the very least you should choose Song Title, because that is certainly a key piece of information. Use the Separator drop-down list to choose which character will separate each portion of the name.

To change the order of items in the filename, click any selected item and use the Move Up or Move Down button to change its position in the filename. As you choose components and change their order, the generic filename under Preview gives you a sense of how each song title will look with your current settings.

Click OK after you decide how you want your filenames to look.

Choosing a file format and quality

Under Rip Settings on the Rip Music tab, the Format drop-down list lets you choose a format and quality in which to store songs you copy. Basically, this all boils down to a trade-off between file size and music quality. File size has to do with how much hard disk space each song consumes. Quality has to do with the depth, clarity, and richness of the music when you listen to it. Music quality is measured in kilobits per second, abbreviated Kbps. The higher the Kbps number, the better the music quality, but the more disk space each song consumes.

Options for choosing are under the Rip Settings heading in the Options dialog box. First, use the Format drop-down list to choose one of the following formats:

- **Windows Media Audio:** Songs are copied to Windows Media Audio (`.wma`) format files and compressed to conserve disk space. You can choose the amount of compression using the Audio Quality slider in the same dialog box. This is a good general-purpose format that plays on all Windows computers and many portable media devices.
- **Windows Media Audio Pro:** Similar to the preceding format, but includes features that make the music sound better on high-end multi-channel sound systems.
- **Windows Media Audio (Variable Bit Rate):** Same as the preceding format, but the amount of compression varies with the complexity of the information being stored. As a rule, you get better quality with smaller file sizes using a variable bit rate. This format is not compatible with all portable music players.
- **Windows Media Audio Lossless:** Same as the preceding format, but files are not compressed at all. (*Lossless* means that no data is lost when the audio file is being made.)The sound quality is excellent, but the files are huge. Still, if you're a true audiophile, or are interested in creating HighMAT (High-Performance Media Access Technology) CDs, this is an excellent choice.
- **MP3:** MP3 is the most widely used format for digital music. It's been around the longest. Unlike the `.wma` formats, you're not limited to playing the songs on Windows-based computers. You can play MP3 songs on any MP3-compatible player.
- **WAV (Lossless):** Stores each song as a WAV file, which offers high quality, but creates enormous files. So you probably want to stay away from this format unless you have some good reason to use it.

If you're new to all of this, and at a complete loss as to what to choose, go with WMA or MP3. Those are common formats that almost any device can play.

If you choose anything but a lossless format, you can then use the Audio Quality slider to choose a quality setting. Again, the basic rule of better quality creating larger files applies. Hard disk space is cheap and plentiful so there's no need to settle for the lowest-quality setting. If in doubt, don't go below 128 Kbps or your music may all end up sounding shallow or kind of "tinny."

As you move the Audio Quality slider to different settings, text beneath the slider tells you roughly how much disk space an entire CD will consume at that setting. To better illustrate how format and audio quality relate to disk space consumption, we ripped a 3-minute song at various sound qualities, and put their sizes in Table 24-1. The last column, "Songs per GB," gives you a sense of how many songs you can get into a single gigabyte of hard disk space at various quality settings.

TABLE 24-1: **A Three-Minute Song in Various Formats and Bit Rates**

Format/Quality	Bit Rate	Size	Songs per GB
Windows Media Audio	192 Kbps	4.17MB	246
Windows Media Audio Pro	192 Kbps	4.18MB	245
WMA Variable Bit Rate	103 Kbps	2.22MB	461
Window Media Audio Lossless	480 Kbps	14.20MB	72
MP3	192 Kbps	4.12MB	249
WAV (Lossless)	320 Kbps	30.30MB	34

See "Understanding Disks and Drives" in Chapter 27, "Understanding Drives, Folders, and Files," for more information on disk drives, capacities, and discovering how much space you have. You might want to take a peek at your available space each time you copy a CD, so you can get a sense of how much free space each copied CD consumes.

After you've chosen a format and audio quality, you have a few more options on the Rip Music tab to choose from.

Copy Protect Music

The Copy Protect Music option on the Rip Music tab lets you decide whether to put copyright protection on the songs you copy. We suspect that a lot of people choose that option thinking it will somehow protect them from messing up the songs. But that's not how it works. The protection that the option offers is for the copyright holder, not for you.

If you choose the Copy Protect option, the songs you copy play only on the computer you're using. This option also puts other restrictions on the songs. For example, you won't be able to import them into Movie Maker or other programs that normally let you edit music. If you want to keep things simple and make sure you can use your copied songs freely, we suggest you leave the Copy Protect Music check box empty.

Rip CD Automatically

If selected, this option tells Windows Media Player to copy all the songs from a CD as soon as you insert the audio CD. Choosing this option, along with the Eject CD option described next, makes it easy to rip a whole collection of CDs in assembly-line fashion. For example, if you have a few dozen CDs you want to rip, you can just insert a CD, wait for it to be copied and ejected, and then insert the next CD.

When you've finished ripping your CD collection, you can then clear this option so that you have more flexibility in deciding what you want to do with each CD you insert into your hard drive.

Eject CD After Ripping

If selected, this option just tells Media Player to eject the CD from the drive when it's finished copying the CD. As mentioned, choosing this option along with the Rip CD Automatically option is a great way to copy multiple CDs in a quick, assembly-line manner.

Still more rip options

Media Player's Options dialog box contains some additional options that affect what happens when you rip CDs. While you still have the Options dialog box open, click the Privacy tab. Then choose among the options summarized next. But remember that not all CDs have media information posted on the Internet. Therefore, even if you do select options as indicated, you may need to manually update media information for a song or album.

- **Display Media Information from The Internet:** Choose (check) this option to have media information, such as song titles, appear automatically when you play or copy a CD.
- **Update Music Files By Retrieving Media Info From The Internet:** Choose this option to have Media Player automatically fill in information from songs you've already copied to your computer.

When you've finished making all of your selections, click OK in the Options dialog box. Now you're ready to start ripping CDs. Remember that you don't need to change the preceding settings every time you copy a CD. The settings you choose apply to all CDs that you copy.

Copying songs

With all the details of choosing how you want to copy CDs out of the way, you're ready to start copying. Here are the steps:

1. If your Internet account requires logging in, get online so that you're connected to the Internet and Media Player can download media information (song titles).
2. Insert the music CD you want to rip (copy) into your CD drive and close the drive door.
3. If Windows Media Player doesn't open automatically, open it yourself. (If some other program opened when you inserted the CD, close that program, and then open Media Player.)
4. If you chose the Rip CD Automatically option described earlier in this chapter, skip down to Step 10 now.
5. If the CD starts playing, click the Stop button down in the play controls.
6. Wait for song titles to appear. If song titles don't appear within 30 seconds or so, the CD might not be in the CDDB. In that case, you can go ahead and rip the CD and then fill in the details later in your media library.

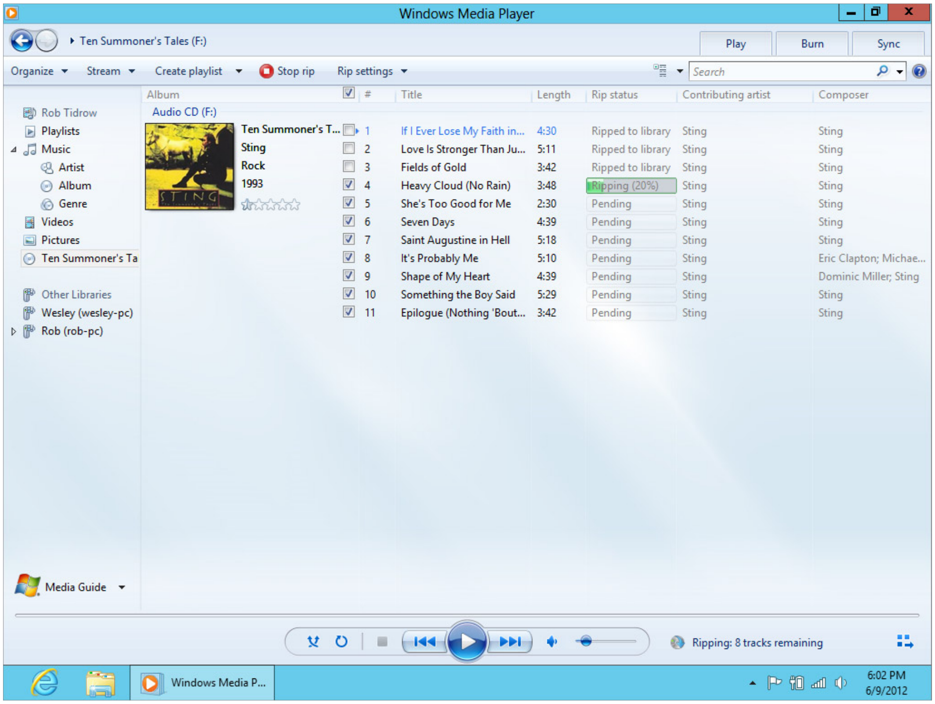
NOTE

CDDB stands for Compact Disk Database. It's an online database that contains song titles for most (but not all) commercially sold CDs.

7. Optionally, clear the checkmark to the left of any songs that you don't want to copy. Media Player will only copy songs that have a checkmark.
8. Click the Rip CD button in the toolbar. Figure 24.11 shows Media Player ripping a Sting CD to disk.
9. Wait until the Rip Status column shows Ripped To Library for all songs you've opted to copy. If the CD doesn't eject automatically, go ahead and eject it.
10. Put the CD back to wherever you normally keep your CDs. You won't need it any more to play songs from your computer or to copy files to custom audio CDs or an MP3 player.

FIGURE 24.11

Media Player ripping a CD to disk


Windows Media Player
Ten Summoner's Tales (F:)
Play
Burn
Sync
Organize
Stream
Create playlist
Stop rip
Rip settings
Search
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Ten Summoner's Ta
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Audio CD (F:)
STING
Ripping: 8 tracks remaining
Windows Media P...
6:02 PM
6/9/2012

Album	☑	#	Title	Length	Rip status	Contributing artist	Composer
Ten Summoner's T...	☐	1	If I Ever Lose My Faith in...	4:30	Ripped to library	Sting	Sting
Sting	☐	2	Love Is Stronger Than Ju...	5:11	Ripped to library	Sting	Sting
Rock	☐	3	Fields of Gold	3:42	Ripped to library	Sting	Sting
1993	☑	4	Heavy Cloud (No Rain)	3:48	Ripping (20%)	Sting	Sting
	☑	5	She's Too Good for Me	2:30	Pending	Sting	Sting
	☑	6	Seven Days	4:39	Pending	Sting	Sting
	☑	7	Saint Augustine in Hell	5:18	Pending	Sting	Sting
	☑	8	It's Probably Me	5:10	Pending	Sting	Eric Clapton; Michae...
	☑	9	Shape of My Heart	4:39	Pending	Sting	Dominic Miller; Sting
	☑	10	Something the Boy Said	5:29	Pending	Sting	Sting
	☑	11	Epilogue (Nothing 'Bout...	3:42	Pending	Sting	Sting

That's it for ripping one CD. To rip more CDs, just repeat Steps 4 to 10 for each CD. If, at any time, you want to check your available hard-disk space, open your Computer folder.

If you don't see any indication of available disk space for your hard disk (typically Local Disk C:), choose Tiles from the Views menu in that folder.

Copying songs from CDs you already own is one way to build up your Media Player music library. Any songs you don't already own, but would like to, you can purchase online and download to your Media Player library. We discuss how that works in the next section.

Getting Music Online

In addition to ripping CDs you already own, you can download music from online stores. The exact procedure varies from one online store to the next. Some are membership sites. Some let you purchase and download songs without joining or paying a membership fee. New stores and services come online all the time, so there's little that we can tell you specifically that applies to all of the available vendors, other than that you should shop around and not necessarily sign up with the first vendor to pop up on your screen. In the bottom left of the Navigation pane, click the arrow beside the Media Guide button and choose Browse All Online Stores to see other options. The button changes to Online Stores. Click the arrow and choose Media Guide if you want to view the Media Guide.

NOTE

Windows 8 includes the Music App available on the Windows 8 Start screen. It provides access to the Windows Store for downloading and managing online music resources. Be sure to read Chapter 37 for information on using the Music app.

Using the Media Player Library

The whole point of a program like Windows Media Player is to build and manage a library of digital media. That includes music, pictures, video, and recorded TV (even though we're focusing on music in this chapter).

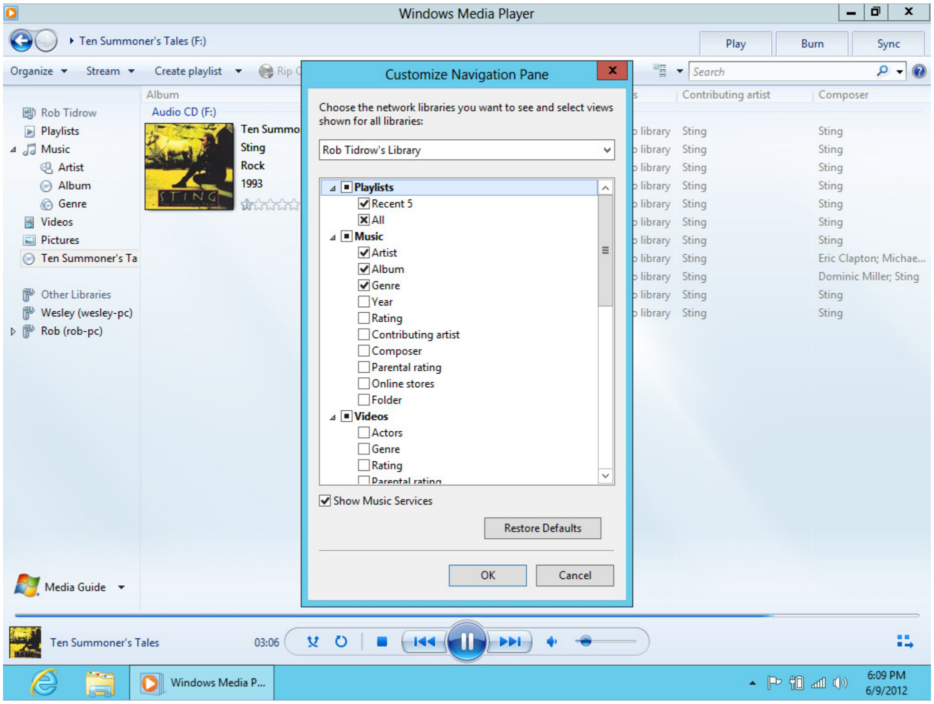
To see and manage your Media Player library, open Media Player in Library mode. If Media Player is currently running in Now Playing mode, click the Switch To Library button.

Navigating the library

There is almost no limit to the ways in which you can view, organize, and change things in the library. You can view media by artist, album, genre, playlist, and other ways. If you want to add other properties to your Navigation pane, click Organize ➪ Customize Navigation Pane to show the Customize Navigation Pane dialog box shown in Figure 24.12.

FIGURE 24.12

Customize Navigation Pane dialog box


Windows Media Player
Ten Summoner's Tales (F:)
Play
Burn
Sync
Organize
Stream
Create playlist
Rip
Search
Album
Contributing artist
Composer
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Ten Summoner's Ta
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Audio CD (F:)
Ten Summo
Sting
Rock
1993
Media Guide
Ten Summoner's Tales
03:06
6:09 PM
6/9/2012
Windows Media P...

Customize Navigation Pane

Choose the network libraries you want to see and select views shown for all libraries:

Rob Tidrow's Library

- ■ Playlists
  - ☑ Recent 5
  - ☒ All
- ■ Music
  - ☑ Artist
  - ☑ Album
  - ☑ Genre
  - ☐ Year
  - ☐ Rating
  - ☐ Contributing artist
  - ☐ Composer
  - ☐ Parental rating
  - ☐ Online stores
  - ☐ Folder
- ■ Videos
  - ☐ Actors
  - ☐ Genre
  - ☐ Rating
  - ☐ Parental rating

☑ Show Music Services

Restore Defaults

OK Cancel

If your Media Player library doesn't show songs, but instead shows pictures or other kinds of media, click an option under Music in the Navigation pane.

In the Navigation pane, you can click the triangle button (if any) next to an item to view different categories such as Artist, Album, Genre, and so on. The following list covers the views you can add to the Navigation pane for music:

- **Artist:** Shows artist names in alphabetical order.
- **Album:** Shows album titles in alphabetical order.
- **Genre:** Shows names of music genres (such as Classical, Rock, Jazz).
- **Year:** Shows albums organized by publication year.
- **Rating:** Shows songs organized by rating (one to five stars). The songs are separated into those you have rated and those that are rated automatically based on your listening habits. Songs that are unrated appear under the Unrated category.
- **Contributing Artist:** Shows songs organized by contributing artists, if any.
- **Composer:** Shows songs organized by composer.

- **Parental Rating:** Shows songs organized by parental rating.
- **Online Stores:** Shows songs based on the store from which it was obtained.
- **Folder:** Shows songs organized by the folder in which they are stored.

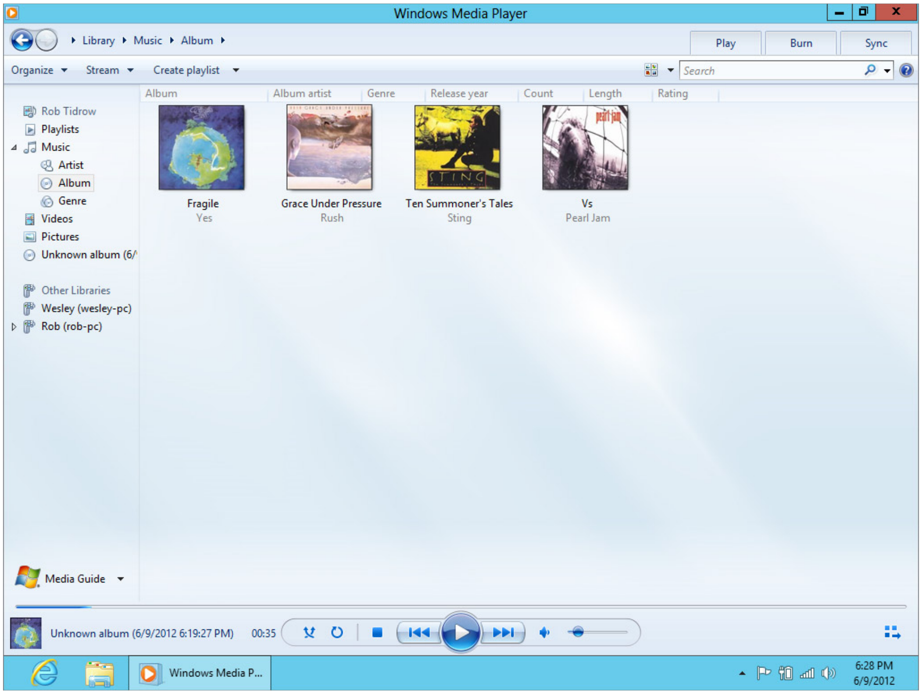
You'll be better able to appreciate the library if you have at least 30 or 40 songs — or better yet, several hundred songs — in your library before reading this section. As you explore your library, keep in mind that you can right-click any icon, stack, category name, or whatever to view, edit, or play items.

Use the View Options button to choose how you want to view things. Depending on where you are at the moment, some View options will be disabled (dimmed) because they're not applicable to the current way of looking at things. But in general, you can choose from the following views:

- **Icon:** Each item is represented by a single icon or stack of icons, as in the example shown in Figure 24.13.

FIGURE 24.13

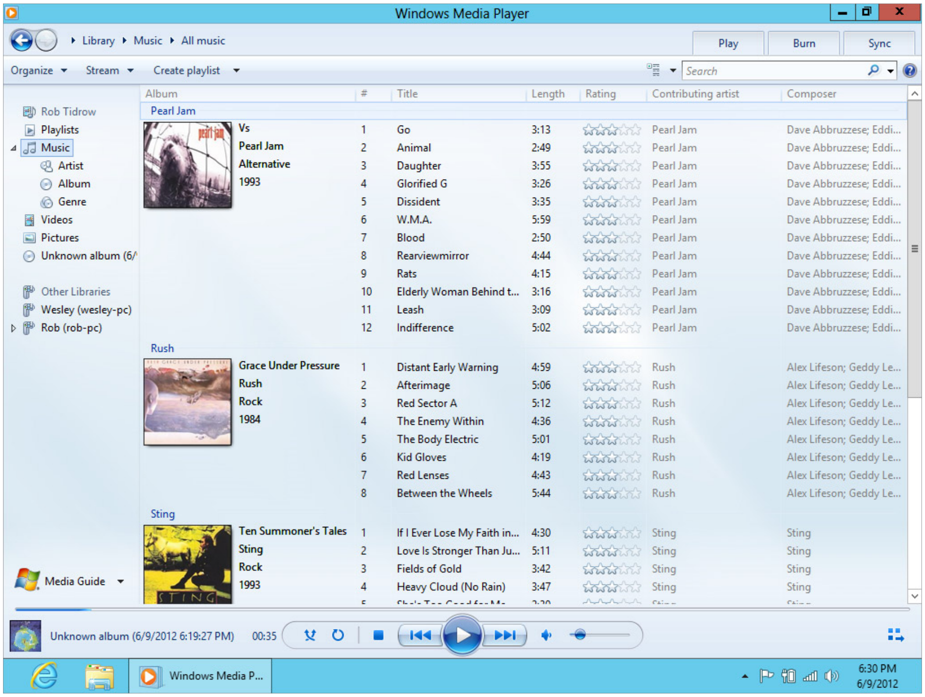
Sample Icon view


Windows Media Player
Library ▸ Music ▸ Album ▸
Play
Burn
Sync
Organize ▾
Stream ▾
Create playlist ▾
Search
Album
Album artist
Genre
Release year
Count
Length
Rating
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Fragile
Yes
Grace Under Pressure
Rush
Ten Summoner's Tales
Sting
Vs
Pearl Jam
Media Guide ▾
Unknown album (6/9/2012 6:19:27 PM)
00:35
Windows Media P...
6:28 PM
6/9/2012

- **Expanded Tile:** Shows the album cover and a list of songs on each album. Available in the Recently Added and Songs categories only (see Figure 24.14).

FIGURE 24.14

Sample Expanded Tile view

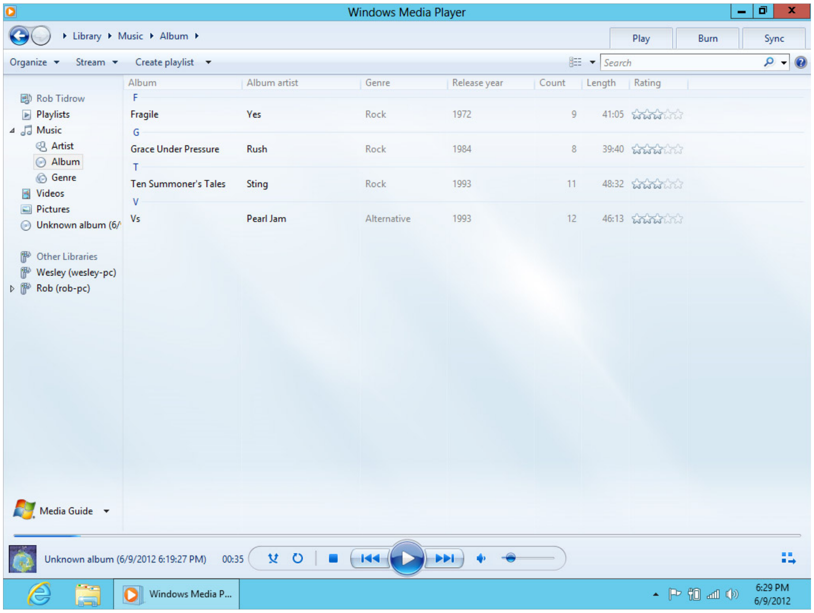

Windows Media Player
Library
Music
All music
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Unknown album (6/9/2012 6:19:27 PM)
00:35
Windows Media P...
6:30 PM
6/9/2012

Album	#	Title	Length	Rating	Contributing artist	Composer
Pearl Jam						
Vs	1	Go	3:13	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
Pearl Jam	2	Animal	2:49	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
Alternative	3	Daughter	3:55	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
1993	4	Glorified G	3:26	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
	5	Dissident	3:35	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
	6	W.M.A.	5:59	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
	7	Blood	2:50	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
	8	Rearviewmirror	4:44	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
	9	Rats	4:15	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
	10	Elderly Woman Behind t...	3:16	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
	11	Leash	3:09	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
	12	Indifference	5:02	★★★☆☆	Pearl Jam	Dave Abbruzzese; Eddi...
Rush						
Grace Under Pressure	1	Distant Early Warning	4:59	★★★☆☆	Rush	Alex Lifeson; Geddy Le...
Rush	2	Afterimage	5:06	★★★☆☆	Rush	Alex Lifeson; Geddy Le...
Rock	3	Red Sector A	5:12	★★★☆☆	Rush	Alex Lifeson; Geddy Le...
1984	4	The Enemy Within	4:36	★★★☆☆	Rush	Alex Lifeson; Geddy Le...
	5	The Body Electric	5:01	★★★☆☆	Rush	Alex Lifeson; Geddy Le...
	6	Kid Gloves	4:19	★★★☆☆	Rush	Alex Lifeson; Geddy Le...
	7	Red Lenses	4:43	★★★☆☆	Rush	Alex Lifeson; Geddy Le...
	8	Between the Wheels	5:44	★★★☆☆	Rush	Alex Lifeson; Geddy Le...
Sting						
Ten Summoner's Tales	1	If I Ever Lose My Faith in...	4:30	★★★☆☆	Sting	Sting
Sting	2	Love Is Stronger Than Ju...	5:11	★★★☆☆	Sting	Sting
Rock	3	Fields of Gold	3:42	★★★☆☆	Sting	Sting
1993	4	Heavy Cloud (No Rain)	3:47	★★★☆☆	Sting	Sting

- **Details:** Shows detailed textual information about each item in a tabular format (see Figure 24.15).
- **Tile:** Shows the album cover, name of band and album, year of the album, and average number of stars given to it, as in the example shown in Figure 24.16.

FIGURE 24.15

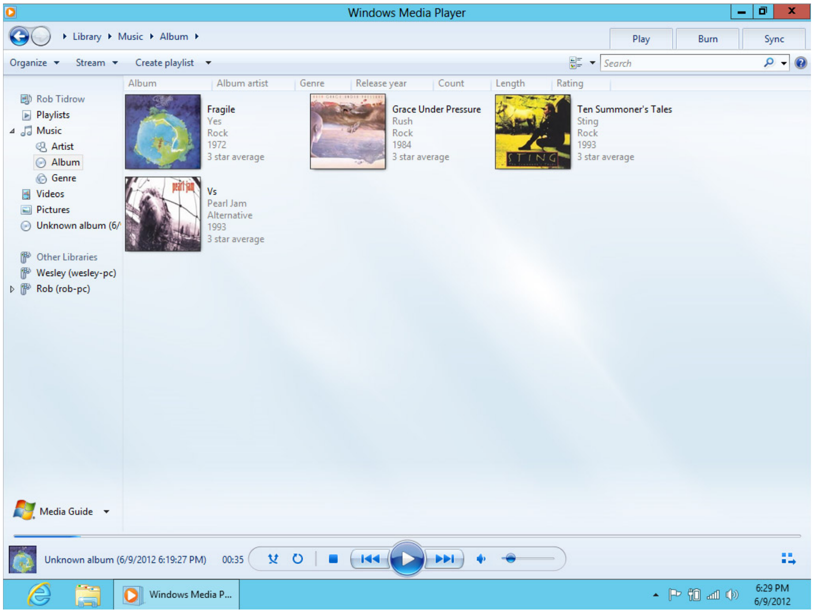
Sample Details view


Windows Media Player
Library ▸ Music ▸ Album ▸
Play
Burn
Sync
Organize ▾
Stream ▾
Create playlist ▾
Search
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide ▾
Unknown album (6/9/2012 6:19:27 PM)
00:35
Windows Media P...
6:29 PM
6/9/2012

Album	Album artist	Genre	Release year	Count	Length	Rating
F						
Fragile	Yes	Rock	1972	9	41:05	★★★☆☆
G						
Grace Under Pressure	Rush	Rock	1984	8	39:40	★★★☆☆
T						
Ten Summoner's Tales	Sting	Rock	1993	11	48:32	★★★☆☆
V						
Vs	Pearl Jam	Alternative	1993	12	46:13	★★★☆☆

FIGURE 24.16

Sample Tile view


Windows Media Player
Library ▸ Music ▸ Album ▸
Play
Burn
Sync
Organize ▾
Stream ▾
Create playlist ▾
Search
Album
Album artist
Genre
Release year
Count
Length
Rating
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide ▾
Unknown album (6/9/2012 6:19:27 PM)
00:35
Windows Media P...
6:29 PM
6/9/2012

Fragile
Yes
Rock
1972
3 star average

Grace Under Pressure
Rush
Rock
1984
3 star average

Ten Summoner's Tales
Sting
Rock
1993
3 star average

Vs
Pearl Jam
Alternative
1993
3 star average

Of course, there's no right way or wrong way to view icons. Just choose whichever view works best at the moment. Feel free to try things out. You can't do any harm by checking out different ways to view things. And nothing you choose is set in stone. You can change your view at any time.

How you use a view depends on what you're viewing. For example, if you're viewing genres, you'll see an icon or stack for each genre in your library. Double-clicking an icon or stack shows you all the songs in that genre. Double-clicking an icon that represents a single album displays songs on that album. To play all the items that an icon represents, right-click the icon and choose Play. Again, doing some exploring on your own is your best bet. You're not permanently changing anything as you explore, so there's no need to be worried.

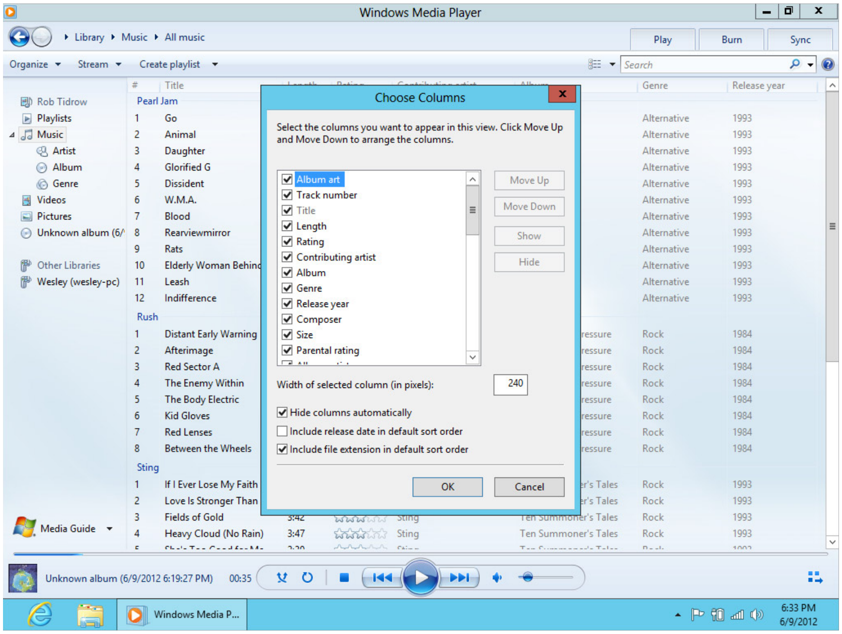
Choosing columns for Media Library

In addition to choosing how you want media information to look, you can choose exactly which information you do and don't want to see. The exact options available to you depend on what you're viewing and how you're viewing it at the moment. To see the full set of options, click Music in the Navigation pane, and then choose Details from the View Options menu. You'll see detailed information about each song organized into rows and columns.

To choose which columns you want to view, right-click a column heading, such as Title or Length, and click Choose Columns on the menu. The Choose Columns dialog box shown in Figure 24.17 opens.

FIGURE 24.17

The Choose Columns dialog box


Windows Media Player
Library
Music
All music
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Media Guide
Unknown album (6/9/2012 6:19:27 PM)
00:35
Windows Media P...
6:33 PM
6/9/2012

Choose Columns

Select the columns you want to appear in this view. Click Move Up and Move Down to arrange the columns.

- ☑ Album art
- ☑ Track number
- ☑ Title
- ☑ Length
- ☑ Rating
- ☑ Contributing artist
- ☑ Album
- ☑ Genre
- ☑ Release year
- ☑ Composer
- ☑ Size
- ☑ Parental rating

Move Up
Move Down
Show
Hide

Width of selected column (in pixels): 240

☑ Hide columns automatically

☐ Include release date in default sort order

☑ Include file extension in default sort order

In the Choose Columns dialog box, select (check) the columns you want to see. Clear (uncheck) columns you don't want to see. You can also control the order of columns, either in the dialog box, or after you exit the dialog box. To control the order of columns while you're in the dialog box, click any selected column name, and then click the Move Up or Move Down button to move it up or down. The higher a column name is in the dialog box, the farther to the left it is in the Details view.

After you've chosen the columns you want to view, click OK. Most likely you won't be able to see all the columns at the same time. But you can use the horizontal scroll bar under the columns to scroll left and right through columns.

Sizing columns

To adjust the width of any column, get the mouse pointer to the right side of the column heading. You'll know the mouse pointer is in the right place when it turns to a two-headed arrow. Then, just drag the column to the width you want.

Moving columns

To move a column left or right, first put the mouse pointer right on the column heading — for example, the heading Title, Length, Album, or Album Artist. Then, hold down the left mouse button and drag the column left or right. Release the mouse pointer when the column is where you want it to be.

Sorting songs

When you're in a Details view, you can also sort items by any column. For example, you can sort them by Title, Length, Album, Album Artist, or any other column heading. The first time you click, items will be sorted into ascending order (alphabetically, or smallest to largest). The second time you click, items will be sorted into descending order (reverse alphabetical, or largest to smallest).

TIP

The techniques for sizing, moving, and sorting by columns apply to most columnar views of data in most programs. This feature is not unique to Media Player.

Getting missing media information automatically

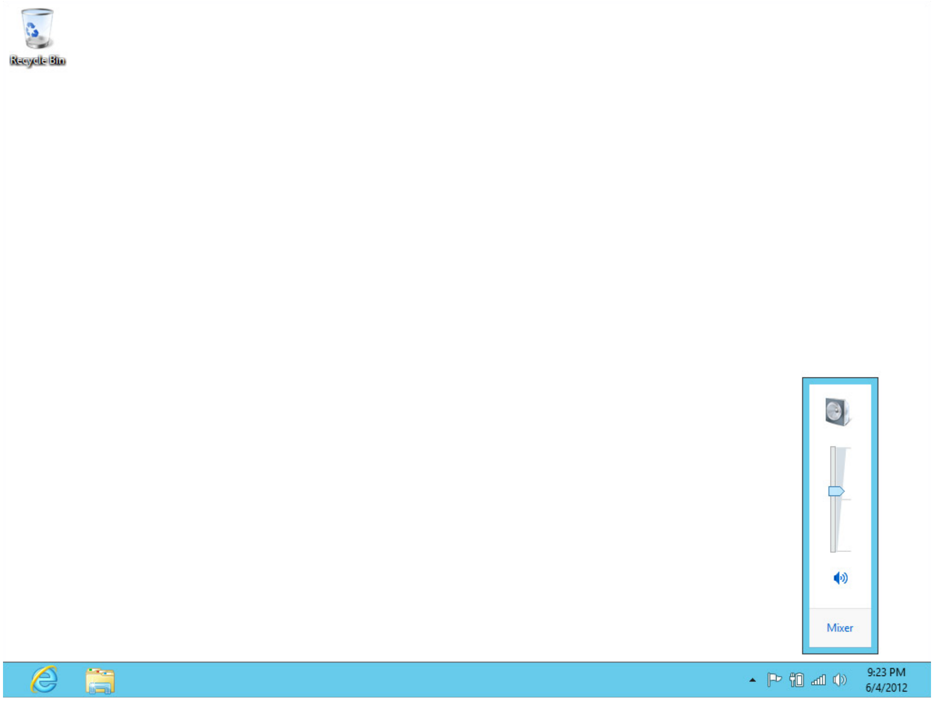
Recall that media information refers to things such as song titles, artist name, and so forth. That information might be missing from some of your songs for a couple of reasons. One reason might be that the information isn't available from the Internet. In that case, you may have to fill in the missing information manually, using techniques described later in this chapter.

A second reason why you might be missing media information is that you weren't online when you copied some CDs. If that's the case, it's not too late to retrieve that information. It's quicker and easier to retrieve the information automatically. So before you start manually changing media information, use the technique described in this section to see how much of that information you can get automatically.

First, you need to check your options for updating media information automatically. Click the Organize button and choose Options. The Library tab in Media Player's Options dialog box appears, as shown in Figure 24.18.

FIGURE 24.18

The Library tab in the Options dialog box



Under the Automatic Media Information Updates For Files heading, choose (check) Retrieve Additional Information From The Internet.

- If you've already added some media information manually and don't want the new information to replace that, choose Only Add Missing Information.
- Otherwise, choose Overwrite All Media Information if you want information you've added yourself to be replaced with information from the Internet.

When you've finished making your selection, click OK in the dialog box. Then, click the Organize button and choose Apply Media Information Changes. After the changes are applied, click the Close button to exit the Apply Changes dialog box.

There's no guarantee that all missing information will be filled in. You may have songs for which there is no online media information. You'll still have to edit those manually. To change the title of a single song, right-click the current title (Track1, Track2, or whatever), choose Edit, and type the correct song title.

Information other than the title is likely to be the same for all the songs on a given album. It's not necessary to change that information one song at a time. You can select multiple songs to which you want to make a change. The change you make is then applied to all the selected songs. We'll get to that in a moment. First, let's look at how you can add songs that you have elsewhere on your computer to your Media Player library.

Choosing what files to include in your library

If you set up multiple user accounts on your computer, each user gets to have his or her own media library. Parents don't have to dig through the kids' songs and vice versa. But you're not stuck with only those songs. Each user also has the option to share songs, and each user has the option to choose or reject songs shared by others. To choose which songs display in your own media library:

1. Click Organize in the taskbar and choose Manage Libraries ➪ Music to open the Music Library Locations dialog box (see Figure 24.19).
2. Click the Add button. The Include Folder In Music dialog box opens.

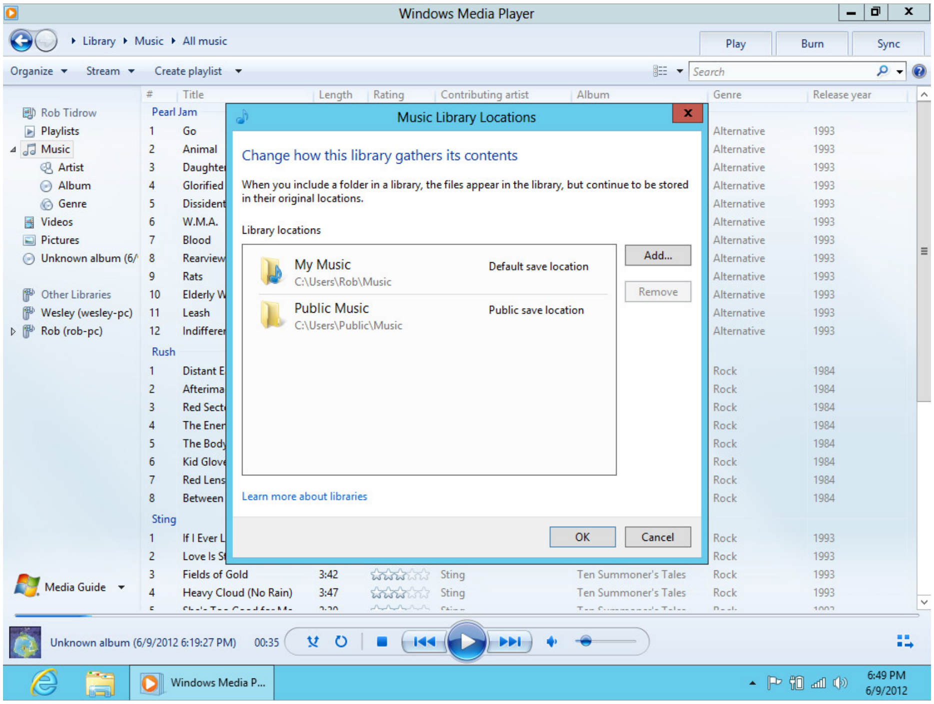
NOTE

Even though we're focusing on music here, Media Player can also display pictures, videos, and recorded TV. You can add folders for those types of files using the same process for those libraries.

3. Browse to the drive and folder that you want to include and click Include Folder. You can repeat this step to monitor as many folders as you wish.
4. To prevent songs from a folder from being added to your library, click the folder (while in the Music Library Locations dialog box) you want to exclude and click the Remove button.
5. Click OK after making your selections to have Media Player search any newly added folders.

FIGURE 24.19

The Music Library Locations dialog box


Windows Media Player
Library ▸ Music ▸ All music
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Unknown album (6/9/2012 6:19:27 PM)
00:35
Windows Media P...
6:49 PM
6/9/2012
Music Library Locations
Add...
Remove
Learn more about libraries
OK
Cancel

Change how this library gathers its contents

When you include a folder in a library, the files appear in the library, but continue to be stored in their original locations.

Library locations

My Music — C:\Users\Rob\Music — Default save location

Public Music — C:\Users\Public\Music — Public save location

Media Player updated your library according to the selections you made.

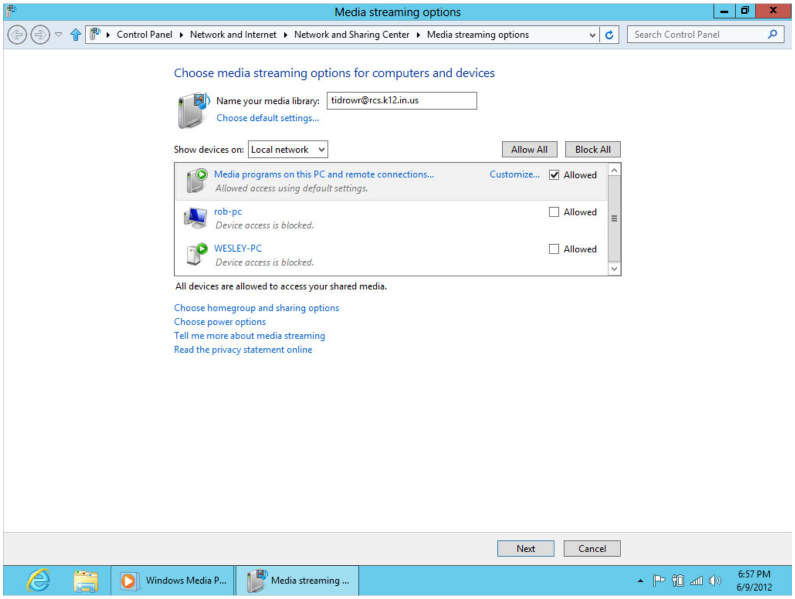
Sharing (streaming) your media library

Each user can opt to share all songs or some songs with other user accounts on the same computer. Likewise, if your computer is part of a private network, each user can choose to share songs with other Windows Vista, Windows 7, and Windows 8 computers. In addition, you can share with Windows 8–compatible devices, such as the Microsoft Xbox 360 gaming device. A great feature in Windows Media Player 12 is the capability to share and stream music to the Internet. So, you can enjoy the music library stored on your home computer when you are at work.

The first step in sharing your music is to enable streaming. To do so, click the Stream button in the toolbar and choose Turn On Media Streaming With HomeGroup. Choose the media streaming options (see Figure 24.20) you want for this device and click Next to see the HomeGroup dialog box. Make sure the Shared option next to Music is selected and click Next. A dialog box (see Figure 24.21) with a password displays; it will enable you to add other computers to the homegroup to access your music. Write down this password. Click Finish.

FIGURE 24.20

Media streaming options


Media streaming options
Control Panel ▸ Network and Internet ▸ Network and Sharing Center ▸ Media streaming options
Search Control Panel
Choose default settings...
Allow All
Block All
Customize...
Choose homegroup and sharing options
Choose power options
Tell me more about media streaming
Read the privacy statement online
Next
Cancel
Windows Media P...
Media streaming ...
6:57 PM
6/9/2012

Choose media streaming options for computers and devices

Name your media library: tidrowr@rcs.k12.in.us

Show devices on: Local network

Media programs on this PC and remote connections... ☑ Allowed
Allowed access using default settings.

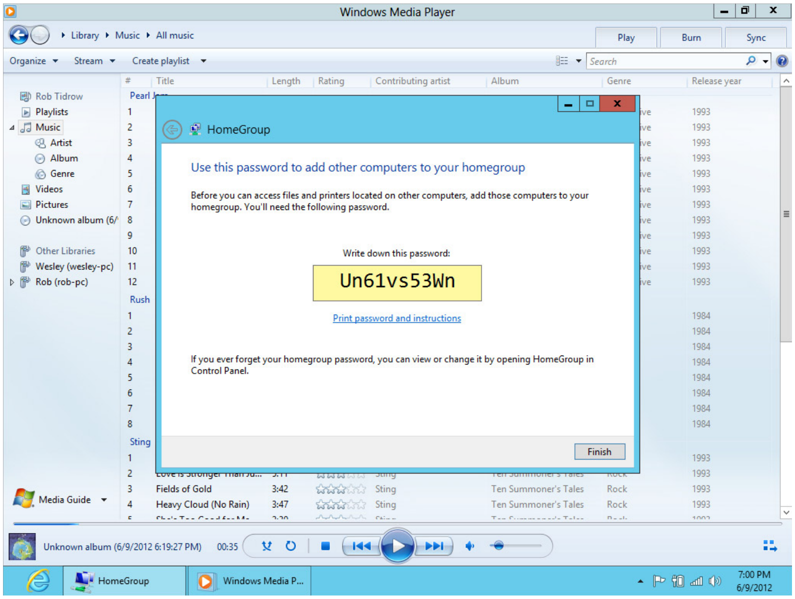
rob-pc ☐ Allowed
Device access is blocked.

WESLEY-PC ☐ Allowed
Device access is blocked.

All devices are allowed to access your shared media.

FIGURE 24.21

Password option to add other computers to access your music


Windows Media Player
Library ▸ Music ▸ All music
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Title
Length
Rating
Contributing artist
Album
Genre
Release year
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Pearl Jam
Rush
Sting
Fields of Gold 3:42 Sting Ten Summoner's Tales Rock 1993
Heavy Cloud (No Rain) 3:47 Sting Ten Summoner's Tales Rock 1993
Unknown album (6/9/2012 6:19:27 PM) 00:35
HomeGroup
Print password and instructions
Finish
HomeGroup
Windows Media P...
7:00 PM
6/9/2012

Use this password to add other computers to your homegroup

Before you can access files and printers located on other computers, add those computers to your homegroup. You'll need the following password.

Write down this password:

Un61vs53Wn

If you ever forget your homegroup password, you can view or change it by opening HomeGroup in Control Panel.

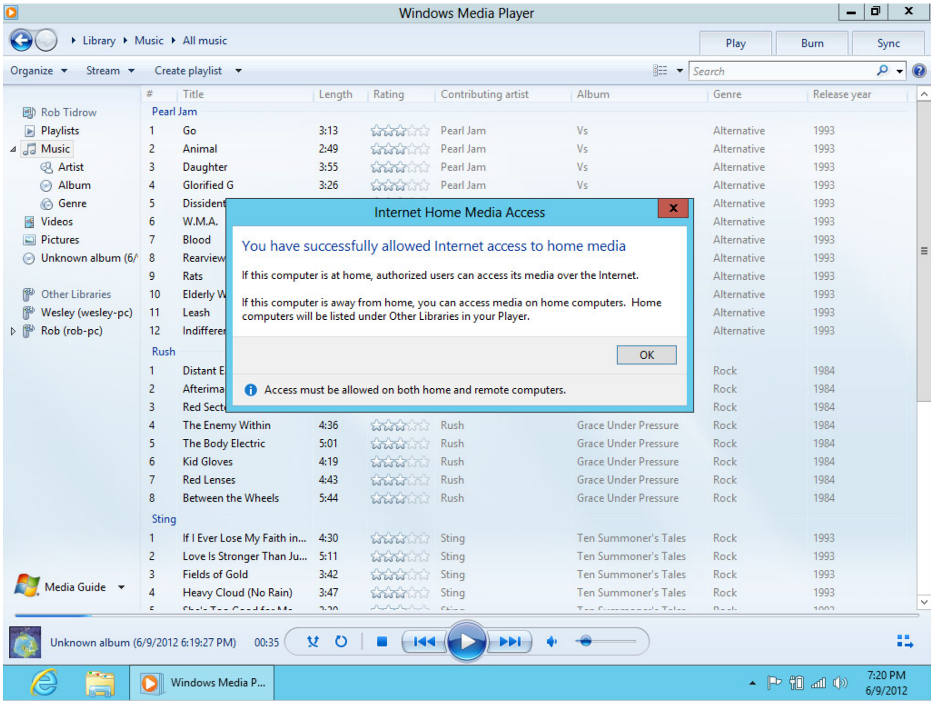
Allowing Internet streaming

As mentioned previously in this chapter, you can use Media Player to stream media to other devices on the Internet. For example, you might listen to your home music library while you are at work. Whatever the case, you must first set up that capability because it is not enabled by default.

Open Media Player and click Stream ➪ Allow Internet Access To Home Media. In the resulting Internet Home Media Access dialog box, click Allow Internet Access To Home Media. If prompted for an administrative password, enter it, or if prompted with a User Account Control dialog box, click Yes. Click OK when Windows 8 indicates it has successfully enabled sharing (see Figure 24.22).

FIGURE 24.22

Remote libraries are set up for Internet access.


Windows Media Player
Library ▸ Music ▸ All music
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Unknown album (6/9/2012 6:19:27 PM)
00:35
Windows Media P...
7:20 PM
6/9/2012

Internet Home Media Access

You have successfully allowed Internet access to home media

If this computer is at home, authorized users can access its media over the Internet.

If this computer is away from home, you can access media on home computers. Home computers will be listed under Other Libraries in your Player.

OK

Access must be allowed on both home and remote computers.

#	Title	Length	Rating	Contributing artist	Album	Genre	Release year
Pearl Jam							
1	Go	3:13	★★★☆☆	Pearl Jam	Vs	Alternative	1993
2	Animal	2:49	★★★☆☆	Pearl Jam	Vs	Alternative	1993
3	Daughter	3:55	★★★☆☆	Pearl Jam	Vs	Alternative	1993
4	Glorified G	3:26	★★★☆☆	Pearl Jam	Vs	Alternative	1993
5	Dissident					Alternative	1993
6	W.M.A.					Alternative	1993
7	Blood					Alternative	1993
8	Rearview					Alternative	1993
9	Rats					Alternative	1993
10	Elderly W					Alternative	1993
11	Leash					Alternative	1993
12	Indifferer					Alternative	1993
Rush							
1	Distant E					Rock	1984
2	Afterima					Rock	1984
3	Red Secti					Rock	1984
4	The Enemy Within	4:36	★★★☆☆	Rush	Grace Under Pressure	Rock	1984
5	The Body Electric	5:01	★★★☆☆	Rush	Grace Under Pressure	Rock	1984
6	Kid Gloves	4:19	★★★☆☆	Rush	Grace Under Pressure	Rock	1984
7	Red Lenses	4:43	★★★☆☆	Rush	Grace Under Pressure	Rock	1984
8	Between the Wheels	5:44	★★★☆☆	Rush	Grace Under Pressure	Rock	1984
Sting							
1	If I Ever Lose My Faith in...	4:30	★★★☆☆	Sting	Ten Summoner's Tales	Rock	1993
2	Love Is Stronger Than Ju...	5:11	★★★☆☆	Sting	Ten Summoner's Tales	Rock	1993
3	Fields of Gold	3:42	★★★☆☆	Sting	Ten Summoner's Tales	Rock	1993
4	Heavy Cloud (No Rain)	3:47	★★★☆☆	Sting	Ten Summoner's Tales	Rock	1993

Using a remote stream

After you configure streaming on a computer, you can then access that stream from another computer, whether on the local network or on the Internet. To play a stream from another computer, first open Media Player. Then, in the Library view, look under the Other Libraries branch in the Navigation pane. You should see the other computer(s) listed there. Click the server from which you want to play, and then play items from the List pane just as you would for a local library.

TIP

If you don't see devices listed in the Other Libraries branch in the Navigation pane, click Organize ➪ Customize Navigation Pane. Choose Other Libraries from the drop-down list, and then place a check beside each device you want to see listed in the Navigation pane. Click OK.

Allow Remote Control

If you want to let other computers and devices push music, video, and photos to Media Player on your computer, you need to enable remote control of Media Player On your computer. To do so, open Media Player and click Stream ➪ Allow Remote Control of My Player. In the resulting Allow Remote Control dialog box, click Allow Remote Control On This Network.

Pushing media to another computer

If you have a media player at home, such as an Xbox 360, Roku SoundBridge, D-Link MediaLounge, or other device, you can stream music from your computer to that device using Media Player. For example, let's say you have a MediaLounge in your living room hooked up to your entertainment center. Your music collection is on your home PC. No problem, just push the music from your PC to the MediaLounge. Open Media Player, and then create the playlist that you want to stream to the remote device. At the top of the List pane, click the Play To button and choose the device from the list.

See Part X, "Networking and Sharing," for more information on private networks and sharing.

Automatically renaming songs

Earlier in this chapter, you learned how you could control filenames of songs you rip (copy) from CDs. Those filenames don't have a big impact on how information shows up in your library. The media information from each song actually comes from properties in the file rather than the filename. Nonetheless, it never hurts to have some consistency in your filenames.

For example, suppose you ripped a bunch of CDs before you realized you could control how the filenames of those songs are formatted. You change the rip settings to something you like better. That change won't affect songs you've already ripped; it will only affect songs that you rip after changing the setting. You can, however, get Media Player to rename previously named songs according to your new settings. Here's how:

1. Click Organize and choose Options.
2. On the Library tab, choose Rename Music Files Using Rip Music Settings.

3. Optionally, if you also want to have the songs rearranged in your rip music folder (typically the Music folder in your user account), choose Rearrange Music In Rip Music Folder Using Rip Music Settings.
4. Click OK after making your selections.
5. To apply changes, click Organize and choose Apply Media Information Changes.

It may take a while to update and rearrange all the songs in your rip music folder. When the change is complete, click the Close button that appears in the progress indicator. You may not notice any changes in Media Player's library, but you likely will notice changes when you open your rip music folder outside of Media Player.

Most of the options and settings discussed so far have to do with groups of songs and things the Media Player does on its own. No matter what settings you choose, there may be times when you need to manually edit (or remove) items in your library.

In some cases, you may need to change a single song title. For example, suppose you have songs named Track1, Track2, Track3, and so forth. You've already tried updating that information through techniques described earlier, but the song titles still don't appear because the song titles aren't available online. When that happens, you'll need to manually change the media information.

When changing a song title, you'll want to work with one song at a time. In other cases, such as when changing a genre or artist name, you may want to make the same change to several songs at once. To make the same change to multiple songs in your library, you first have to select the songs you want to change. So before talking about manually editing songs, let's look at techniques for selecting the songs you want to change.

Selecting in media library

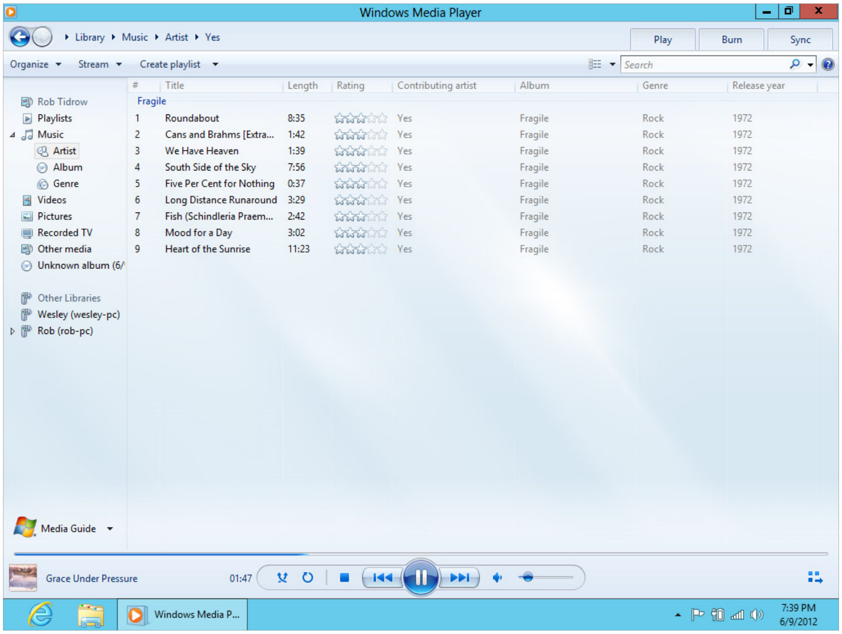
Your media library isn't set in stone. You can change the information you see at any time. Typically, you just right-click the thing you want to change and choose Edit to change it or Delete to remove it. We'll get to the specifics in a moment, but first, let's talk about *selecting* items in the library. Selecting two or more items allows you to make the same change to all those selected items in one fell swoop.

Selecting items in Media Library is much like selecting icons in folders, so if you already know how to do that, you're ahead of the game. You can select items in any view, but you might find it easiest to work in the Details view. For example, click Music in the Navigation pane at the left side of the window. Then choose Details from the View Options drop-down list. Finally, click whatever column heading arranges the songs in a way that groups them in whatever way is easiest for you to work with at the moment.

One way to select all the items in a group is to click the heading that precedes the group. For example, in Figure 24.23, we clicked the artist name Yes to select all the songs under that category. The selected songs are highlighted. Any change you make to one of the selected songs is applied to all the selected songs.

FIGURE 24.23

Selected songs under Yes heading


Windows Media Player
Library ▸ Music ▸ Artist ▸ Yes
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Grace Under Pressure
01:47
Windows Media P...
7:39 PM
6/9/2012

Fragile

#	Title	Length	Rating	Contributing artist	Album	Genre	Release year
1	Roundabout	8:35	★★★☆☆	Yes	Fragile	Rock	1972
2	Cans and Brahms [Extra...	1:42	★★★☆☆	Yes	Fragile	Rock	1972
3	We Have Heaven	1:39	★★★☆☆	Yes	Fragile	Rock	1972
4	South Side of the Sky	7:56	★★★☆☆	Yes	Fragile	Rock	1972
5	Five Per Cent for Nothing	0:37	★★★☆☆	Yes	Fragile	Rock	1972
6	Long Distance Runaround	3:29	★★★☆☆	Yes	Fragile	Rock	1972
7	Fish (Schindleria Praem...	2:42	★★★☆☆	Yes	Fragile	Rock	1972
8	Mood for a Day	3:02	★★★☆☆	Yes	Fragile	Rock	1972
9	Heart of the Sunrise	11:23	★★★☆☆	Yes	Fragile	Rock	1972

Another way to select multiple adjacent songs is to click the first one you want to select. Then hold down the Shift key and click the last one you want to select. The two songs you clicked and all the songs in between are selected.

To select multiple songs that aren't adjacent to one another, click the first one that you want to select. Then hold down the Ctrl key while clicking other songs you want to select. That same technique lets you deselect one selected song without deselecting any other songs.

You can also use the keyboard to select songs, as follows:

- To select every song in the library, click Songs in the Navigation pane, click a song title, and press Ctrl+A.
- To select all the songs from the current song to the bottom of the list, click the first song you want to select and press Shift+End.
- To select all the songs to the top of the list, click the first song and press Shift + Home.

To deselect songs, click a neutral area in the program window, such as the empty space to the left of the play controls.

Selecting songs doesn't have any effect on them, other than to highlight them. However, any action you take while the songs are selected is applied to all of the selected songs. The following sections look at things you can do with any one song or any number of selected songs.

Changing a song title

Every song on a CD is likely to have its own unique title, so you generally have to change titles one at a time. To change just one song title, first make sure you don't have multiple songs selected. (Click the song you want to change so that only that song it selected.) Then, right-click the title you want to change and choose Edit. Type the new title and press Enter.

Changing genre, artist, and so on

You can change the genre, artist, album title, or any other media information for a song by right-clicking in a specific column and choosing Edit. But because all the songs on a CD may have that same artist, or belong to the same genre, you might want to make the change to several songs. First, select all the songs to which you want to apply the change. Then, click the word or name you want to change in any one of the selected songs and choose Edit. Type in the new name or word and press Enter. The change will occur in all the selected songs.

Changing incorrect media information

Sometimes Media Player will get media information from the Internet, but it's the wrong information. This is especially true when working with multiple CD sets. Rather than manually typing all the information for the CD, you can take a shot at finding the correct information online. To do so, click Album in the Navigation pane. Then scroll to the album that has the incorrect icon, right-click its icon, and choose Update Album Info. Then double-click the album's icon to see whether the situation has improved at all.

If updating the album info didn't help, you can try right-clicking the album title just above its song titles and choosing Find Album Info. Most likely, you'll get the same faulty information you got the first time. But you can click the Search button in the lower-left corner of the Album Info window that opens and try searching by the artist's name or album title. You may get lucky and find the exact album you're looking for. The Album Info window acts like a wizard, so you can just follow the instructions on the screen and use the buttons along the bottom of the window to aid in your search.

If you do find the exact album you're looking for, click the Finish button in the Album Info window and Media Player copies the media information to the album in your media library. If you don't have any such luck, you can still manually enter the correct information for each song on the album using the techniques described in the previous sections.

Rating songs

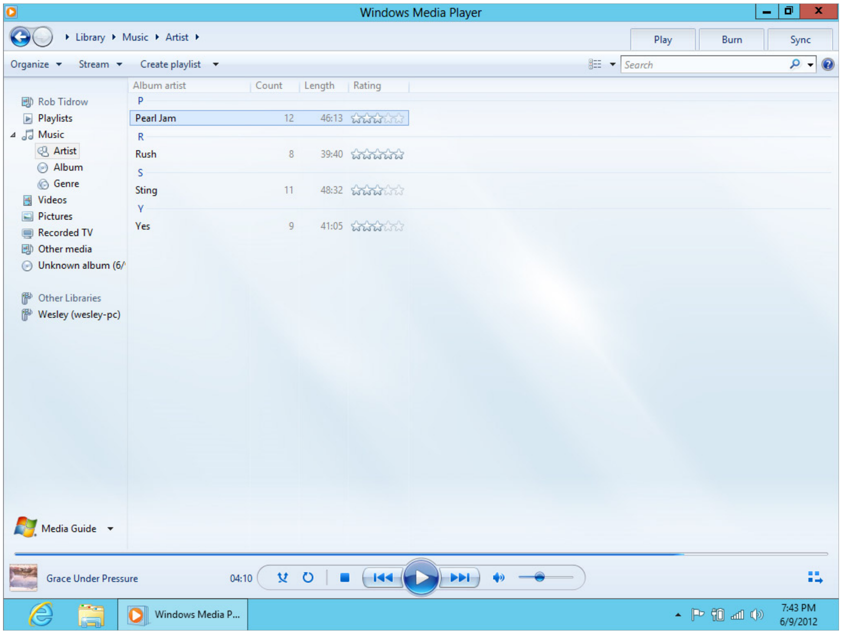
You've probably noticed the star ratings that Media Player adds to each song. By default, the ratings are all the same (three stars) because the idea is for you to rate each song according to your own likes and dislikes. Give five stars to your favorite songs, one star to songs you don't like, and something in between for all the rest.

To change the rating of a single song, right-click the title of the song you want to rate, choose Rate, and enter the number of stars you want to give it. To rate multiple songs, first decide what rating you want to apply (such as five stars). Then select all the songs to which you want to apply that rating. (You can use the Ctrl+click method to select multiple non-adjacent songs.) After you've selected all the songs to which you want to apply a rating, right-click any selected song, choose Rate, and choose the desired rating.

Any time you want to view all the songs to which you've applied a rating, click Organize ➪ Sort By ➪ Rating. The Contents pane in the center of the program window will show rating categories: one category for ratings you've applied and another for songs you haven't rated yet but were given ratings automatically, like the example in Figure 24.24.

FIGURE 24.24

Stars representing ratings


Windows Media Player
Library ▸ Music ▸ Artist ▸
Play
Burn
Sync
Organize ▾
Stream ▾
Create playlist ▾
Search
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Media Guide ▾
Grace Under Pressure
04:10
Windows Media P...
7:43 PM
6/9/2012

Album artist	Count	Length	Rating
P			
Pearl Jam	12	46:13	★★★☆☆
R			
Rush	8	39:40	★★★★★
S			
Sting	11	48:32	★★★☆☆
Y			
Yes	9	41:05	★★★☆☆

To play all the songs to which you've given a certain rating, right-click the rating icon and choose Play. To see all the songs to which you've applied a given rating, double-click the rating icon.

Making Custom Playlists

A playlist is a group of songs, photos, video, or other Media Player items. In Media Player's library, every icon, stack, and Navigation pane category is a playlist in its own right, which you can play by right-clicking and choosing Play. So every time you open

Windows Media Player and click the Library button in the features taskbar, you have many playlists from which to choose.

A custom playlist is one you create yourself. A custom playlist can contain any songs you like, in any order you like. For example, you can create a Party playlist of songs to play during a party. You can create a Favorites playlist of just your favorite songs. You can also create custom playlists of songs you want to copy to your own custom CDs, DVDs, or portable music player.

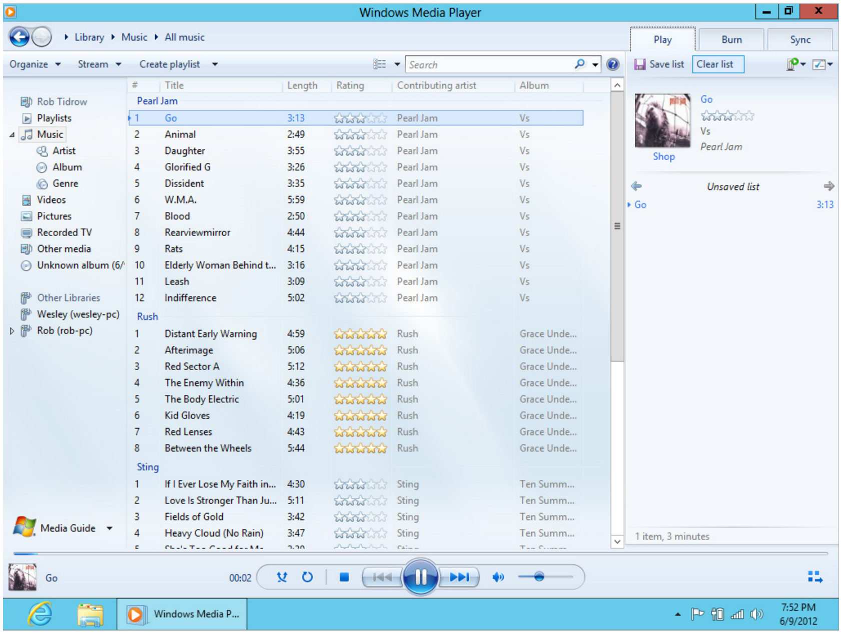
To get started on creating a custom playlist, follow these steps:

1. If you haven't already done so, open Windows Media Player.
2. Open the Library view if currently in Now Playing view.
3. If you don't see the Playlist pane at the right side of the program window, do either of the following to make it visible:
   - Click the Play tab.
   - Click the Organize button and choose Layout ➪ Show List.

To create your own custom playlist, you'll need to start with an empty one, like the example at the right side of Figure 24.25. If your List pane isn't empty, click the Clear List button at the top of the Playlist pane.

FIGURE 24.25

Empty List pane


Windows Media Player
Library
Music
All music
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Save list
Clear list
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Go
Vs
Pearl Jam
Shop
Unsaved list
Go
3:13
1 item, 3 minutes
Go
00:02
Windows Media P...
7:52 PM
6/9/2012

#	Title	Length	Rating	Contributing artist	Album
Pearl Jam					
1	Go	3:13	★★★☆☆	Pearl Jam	Vs
2	Animal	2:49	★★★☆☆	Pearl Jam	Vs
3	Daughter	3:55	★★★☆☆	Pearl Jam	Vs
4	Glorified G	3:26	★★★☆☆	Pearl Jam	Vs
5	Dissident	3:35	★★★☆☆	Pearl Jam	Vs
6	W.M.A.	5:59	★★★☆☆	Pearl Jam	Vs
7	Blood	2:50	★★★☆☆	Pearl Jam	Vs
8	Rearviewmirror	4:44	★★★☆☆	Pearl Jam	Vs
9	Rats	4:15	★★★☆☆	Pearl Jam	Vs
10	Elderly Woman Behind t...	3:16	★★★☆☆	Pearl Jam	Vs
11	Leash	3:09	★★★☆☆	Pearl Jam	Vs
12	Indifference	5:02	★★★☆☆	Pearl Jam	Vs
Rush					
1	Distant Early Warning	4:59	★★★★★	Rush	Grace Unde...
2	Afterimage	5:06	★★★★★	Rush	Grace Unde...
3	Red Sector A	5:12	★★★★★	Rush	Grace Unde...
4	The Enemy Within	4:36	★★★★★	Rush	Grace Unde...
5	The Body Electric	5:01	★★★★★	Rush	Grace Unde...
6	Kid Gloves	4:19	★★★★★	Rush	Grace Unde...
7	Red Lenses	4:43	★★★★★	Rush	Grace Unde...
8	Between the Wheels	5:44	★★★★★	Rush	Grace Unde...
Sting					
1	If I Ever Lose My Faith in...	4:30	★★★☆☆	Sting	Ten Summ...
2	Love Is Stronger Than Ju...	5:11	★★★☆☆	Sting	Ten Summ...
3	Fields of Gold	3:42	★★★☆☆	Sting	Ten Summ...
4	Heavy Cloud (No Rain)	3:47	★★★☆☆	Sting	Ten Summ...

To create your custom playlist, drag any song titles you want from the Contents pane to the left of the playlist into the playlist. As an alternative to dragging one song title at a time, you can select multiple songs and drag them all at once. As an alternative to dragging, you can right-click any song title and choose Add To Playlist. Or select multiple songs, right-click any selected song, and choose Add To Playlist.

NOTE

If you skipped the earlier section, "Using the Media Player Library," you'll need to go back and learn some basic library navigation skills before you can find songs to add to your playlist.

To add all the songs from an album to the playlist, right-click the album's icon and choose Add To Playlist. Likewise, you can right-click any icon or stack that represents a category of songs — such as a genre, artist name, or rating — and choose Add To Playlist. All the songs within that category are added to the playlist.

Don't worry about adding too much stuff to the playlist. There's almost no limit to how large a playlist can be. And you can also remove any song from the playlist at any time.

Managing songs in a playlist

After you have some songs in a playlist, you can arrange them as you see fit. Use any of the following techniques to do so:

- Drag any song title up or down to change its position in the list.
- Right-click any song title and choose Move Up or Move Down.
- Click the List Options button above the list, and choose whichever option best describes how you want them sorted (see Figure 24.26).
- To put the songs in random order, choose Shuffle List from the List Options menu.

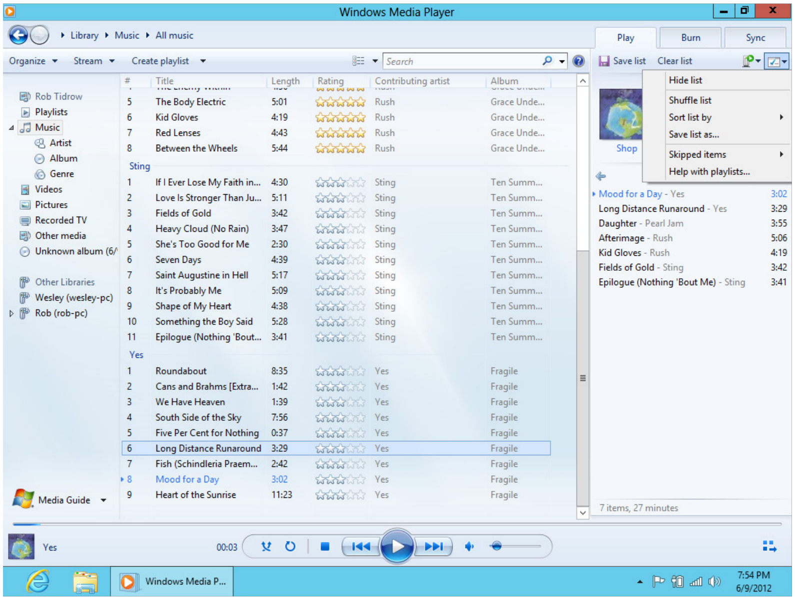
TIP

To widen or narrow the List pane, drag its inner border left or right.

Figure 24.27 shows a completed playlist.

FIGURE 24.26

Sorting songs in a playlist


Windows Media Player
Library
Music
All music
Organize
Stream
Create playlist
Search
Play
Burn
Sync
Save list
Clear list
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Shop
Hide list
Shuffle list
Sort list by
Save list as...
Skipped items
Help with playlists...
Yes
00:03
7:54 PM
6/9/2012
Windows Media P...

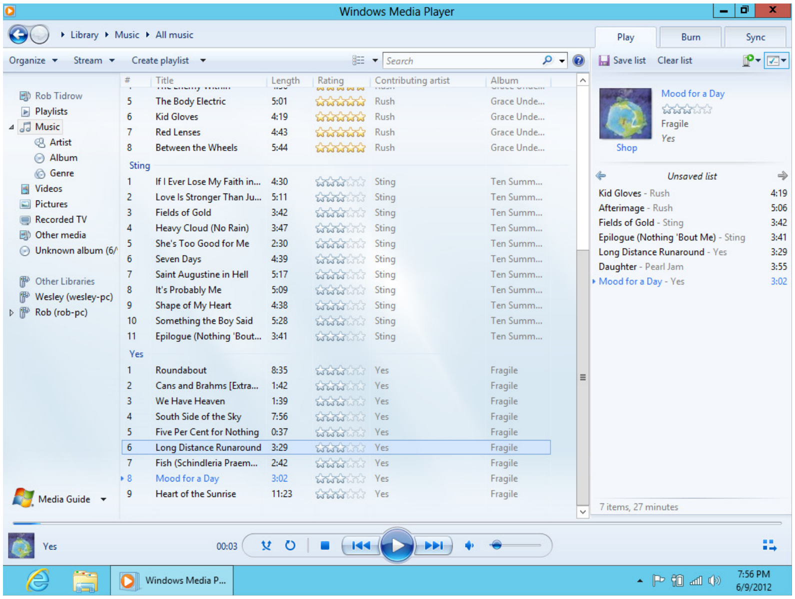
#	Title	Length	Rating	Contributing artist	Album
5	The Body Electric	5:01	★★★★★	Rush	Grace Unde...
6	Kid Gloves	4:19	★★★★★	Rush	Grace Unde...
7	Red Lenses	4:43	★★★★★	Rush	Grace Unde...
8	Between the Wheels	5:44	★★★★★	Rush	Grace Unde...
Sting					
1	If I Ever Lose My Faith in...	4:30	★★★☆☆	Sting	Ten Summ...
2	Love Is Stronger Than Ju...	5:11	★★★☆☆	Sting	Ten Summ...
3	Fields of Gold	3:42	★★★☆☆	Sting	Ten Summ...
4	Heavy Cloud (No Rain)	3:47	★★★☆☆	Sting	Ten Summ...
5	She's Too Good for Me	2:30	★★★☆☆	Sting	Ten Summ...
6	Seven Days	4:39	★★★☆☆	Sting	Ten Summ...
7	Saint Augustine in Hell	5:17	★★★☆☆	Sting	Ten Summ...
8	It's Probably Me	5:09	★★★☆☆	Sting	Ten Summ...
9	Shape of My Heart	4:38	★★★☆☆	Sting	Ten Summ...
10	Something the Boy Said	5:28	★★★☆☆	Sting	Ten Summ...
11	Epilogue (Nothing 'Bout...	3:41	★★★☆☆	Sting	Ten Summ...
Yes					
1	Roundabout	8:35	★★★☆☆	Yes	Fragile
2	Cans and Brahms [Extra...	1:42	★★★☆☆	Yes	Fragile
3	We Have Heaven	1:39	★★★☆☆	Yes	Fragile
4	South Side of the Sky	7:56	★★★☆☆	Yes	Fragile
5	Five Per Cent for Nothing	0:37	★★★☆☆	Yes	Fragile
6	Long Distance Runaround	3:29	★★★☆☆	Yes	Fragile
7	Fish (Schindleria Praem...	2:42	★★★☆☆	Yes	Fragile
8	Mood for a Day	3:02	★★★☆☆	Yes	Fragile
9	Heart of the Sunrise	11:23	★★★☆☆	Yes	Fragile

Mood for a Day - Yes	3:02
Long Distance Runaround - Yes	3:29
Daughter - Pearl Jam	3:55
Afterimage - Rush	5:06
Kid Gloves - Rush	4:19
Fields of Gold - Sting	3:42
Epilogue (Nothing 'Bout Me) - Sting	3:41

7 items, 27 minutes

FIGURE 24.27

A playlist


Windows Media Player
Library
Music
All music
Organize
Stream
Create playlist
Search
Play
Burn
Sync
Save list
Clear list
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Shop
Mood for a Day
Fragile
Yes
Unsaved list
Yes
00:03
7:56 PM
6/9/2012
Windows Media P...

#	Title	Length	Rating	Contributing artist	Album
5	The Body Electric	5:01	★★★★★	Rush	Grace Unde...
6	Kid Gloves	4:19	★★★★★	Rush	Grace Unde...
7	Red Lenses	4:43	★★★★★	Rush	Grace Unde...
8	Between the Wheels	5:44	★★★★★	Rush	Grace Unde...
Sting					
1	If I Ever Lose My Faith in...	4:30	★★★☆☆	Sting	Ten Summ...
2	Love Is Stronger Than Ju...	5:11	★★★☆☆	Sting	Ten Summ...
3	Fields of Gold	3:42	★★★☆☆	Sting	Ten Summ...
4	Heavy Cloud (No Rain)	3:47	★★★☆☆	Sting	Ten Summ...
5	She's Too Good for Me	2:30	★★★☆☆	Sting	Ten Summ...
6	Seven Days	4:39	★★★☆☆	Sting	Ten Summ...
7	Saint Augustine in Hell	5:17	★★★☆☆	Sting	Ten Summ...
8	It's Probably Me	5:09	★★★☆☆	Sting	Ten Summ...
9	Shape of My Heart	4:38	★★★☆☆	Sting	Ten Summ...
10	Something the Boy Said	5:28	★★★☆☆	Sting	Ten Summ...
11	Epilogue (Nothing 'Bout...	3:41	★★★☆☆	Sting	Ten Summ...
Yes					
1	Roundabout	8:35	★★★☆☆	Yes	Fragile
2	Cans and Brahms [Extra...	1:42	★★★☆☆	Yes	Fragile
3	We Have Heaven	1:39	★★★☆☆	Yes	Fragile
4	South Side of the Sky	7:56	★★★☆☆	Yes	Fragile
5	Five Per Cent for Nothing	0:37	★★★☆☆	Yes	Fragile
6	Long Distance Runaround	3:29	★★★☆☆	Yes	Fragile
7	Fish (Schindleria Praem...	2:42	★★★☆☆	Yes	Fragile
8	Mood for a Day	3:02	★★★☆☆	Yes	Fragile
9	Heart of the Sunrise	11:23	★★★☆☆	Yes	Fragile

Kid Gloves - Rush	4:19
Afterimage - Rush	5:06
Fields of Gold - Sting	3:42
Epilogue (Nothing 'Bout Me) - Sting	3:41
Long Distance Runaround - Yes	3:29
Daughter - Pearl Jam	3:55
Mood for a Day - Yes	3:02

7 items, 27 minutes

To remove a song from the playlist, right-click the song title and choose Remove From List. Optionally, you can select multiple songs using the Ctrl+click or Shift+click method. Then press Delete (Del) or right-click any selected item and choose Remove From List.

Saving a playlist

To save a playlist, name the list by clicking Unsaved List and entering a name. To rename a list, simply click the name and type a new one, then press Enter.

Viewing, playing, and changing playlists

To play all the songs in a playlist, or change a playlist, first click the Play tab. If the Navigation pane isn't open, use the Layout Options button to open it. The playlists appear under the Playlists branch in the Navigation pane. If you click Playlists in the Navigation pane, you'll see all of your saved playlists in the Contents pane as icons. Recent playlists will be listed first, followed by all playlists, as in Figure 24.27. In the example, we chose Tile from the View Options to show the playlists.

To use a playlist, right-click its icon or name and choose an option, depending on what you want to do:

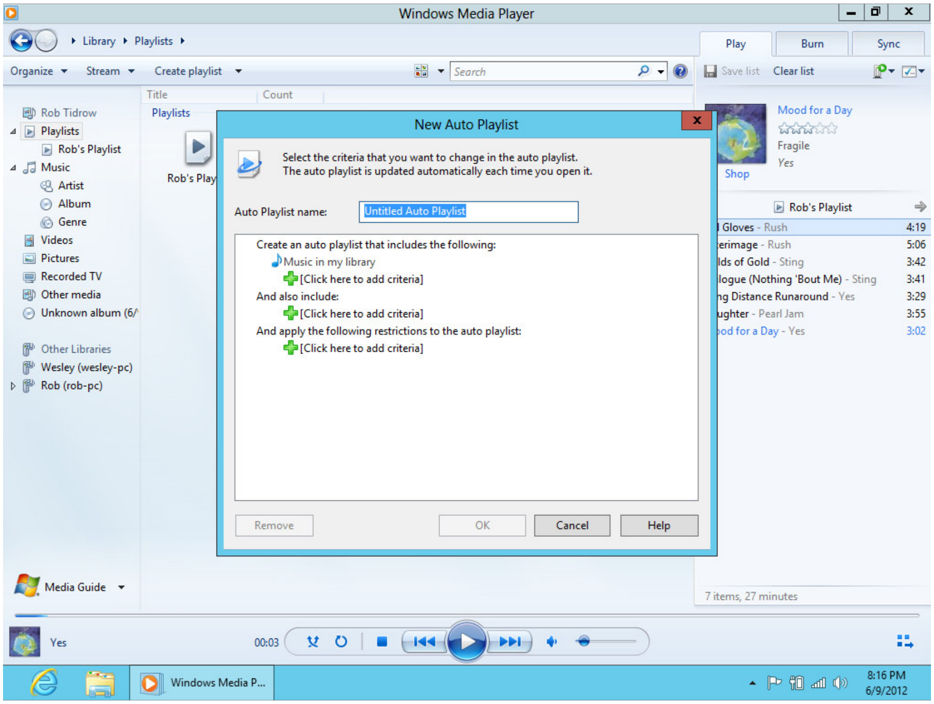
- **Open:** Shows the contents of the playlist in the Contents pane.
- **Play:** Plays all the songs in the playlist.
- **Add To:** Adds the songs from the playlist to whatever playlist is currently in the List pane.
- **Rename:** Enables you to change the name of the playlist.
- **Delete:** Deletes the playlist.
- **Open File Location:** Opens the folder in which the playlist is stored.

Using and creating Auto Playlists

An Auto Playlist is one that gets its content automatically. You can also create your own Auto Playlists based on any criteria you like. To create an Auto Playlist, click the arrow beside the Create Playlist button in the toolbar and choose Create Auto Playlist. The New Auto Playlist dialog box opens, as shown in Figure 24.28.

FIGURE 24.28

New Auto Playlist dialog box


Windows Media Player
Library ▸ Playlists ▸
Play
Burn
Sync
Organize ▾
Stream ▾
Create playlist ▾
Search
Save list
Clear list
Title
Count
Rob Tidrow
Playlists
Rob's Playlist
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Playlists
Rob's Play
Mood for a Day
Fragile
Yes
Shop
Rob's Playlist
Gloves - Rush 4:19
erimage - Rush 5:06
lds of Gold - Sting 3:42
logue (Nothing 'Bout Me) - Sting 3:41
ng Distance Runaround - Yes 3:29
ughter - Pearl Jam 3:55
ood for a Day - Yes 3:02
7 items, 27 minutes
Media Guide ▾
Yes
00:03
Windows Media P...
8:16 PM
6/9/2012
Remove
OK
Cancel
Help

New Auto Playlist

Select the criteria that you want to change in the auto playlist.
The auto playlist is updated automatically each time you open it.

Auto Playlist name: Untitled Auto Playlist

Create an auto playlist that includes the following:
Music in my library
[Click here to add criteria]
And also include:
[Click here to add criteria]
And apply the following restrictions to the auto playlist:
[Click here to add criteria]

To specify a criterion for the Auto Playlist, click the + sign under Music in My Library and choose an option from the resulting drop-down list. Then specify criteria by clicking options that appear next to the funnel icon. For example, if you wanted to create an Auto Playlist for songs in which Carlos Santana is a contributing artist, choose Contributing Artist from the list, and then click the Click To Set link and either choose an artist's name or type the artist's name.

You could create an Auto Playlist, perhaps named “Today's Tunes,” by choosing Date Added from the drop-down list and then choosing a date specification (such as Last 7 Days) from the links that appear beside the new criteria item.

Suppose you have many different types of files in your library and you want to be able to quickly view just the MP3 files. You could create an Auto Playlist named “MP3s” (or whatever) and use the criteria File Type and MP3.

You can specify multiple criteria if you like. Multiple criteria are always treated as "and" logic, which means each new criterion narrows, rather than expands, the Auto Playlist's contents. For example, if you specify the criteria Contributing Artist Contains Santana and Date Added To Library Is After Last 30 Days, you'll see all songs added to the library in the last 30 days where the Contributing Artist is Santana.

To include pictures, video, or TV shows in the Auto Playlist, choose an option under the And Also Include heading. Or, to place additional restrictions on the content, choose options under And Apply The Following Restrictions To The Auto Playlist.

When you've finished specifying criteria for your Auto Playlist, click OK. The Auto Playlist will be listed in the Navigation pane along with all others. To play the Auto Playlist and see its current contents, double-click its name or icon. To change the criteria that define the Auto Playlist's contents, right-click its icon, and choose Edit.

Creating Your Own Music CDs

Although CD players are becoming less and less popular (because of smartphones, MP3 players, iPhones, and the like), many people still have CD players in their vehicles. For that reason, you may want to opt for a custom CD of your favorite music. Creating your own custom music CDs is a lot of fun. It's also a great way to protect any new CDs you purchase from getting scratched and ruined. When you buy a new CD, rip it to your Media Library, and then put it back in its case for safe-keeping. Burn a copy of the CD (or just your favorite songs from the CD along with some other favorite songs), and use the copy in your home or car stereo. In some cases, you can also copy songs you purchased online to CDs.

If you buy blank CDs in spindles of 50 or more, they are typically very inexpensive. You won't get the little plastic jewel case, but you can buy paper sleeves or jewel cases separately. Or you can keep all the CDs in a CD binder.

Types of music CDs

Before we get into the specifics of burning CDs, it's important to understand that you can create two different types of music CDs:

- **Audio CD:** This type of CD plays in any home stereo, car stereo, portable CD player, or computer. You must burn songs to a CD-R disk (preferably an Audio CD-R) to create this type of CD because most non-computer players can't play CD-RW disks or DVD disks.

- **Data CD:** This type of music CD plays in computers, or in any stereo that's capable of playing this type of CD. You can use CD-R or CD-RW disks. However, you must choose a disk type that is compatible with both your computer's CD/DVD burner and the device on which you want to play the disk.

TIP

CDs and DVDs are examples of *optical media*, so-named because they use a laser rather than magnetism to read and write data. All the different types of disks (CD-R, CD-RW, DVD-R, DVD+R, DVD-RW, DVD+RW, and so forth) make things woefully confusing.

If you don't know what type of disks your stereo can play, refer to the instructions that came with that device. Optionally, create an RW (Read/Write) disk and try it out. There's no loss if the disk doesn't play because you can always erase the disk and use it for something else. Once burned, R (Recordable) disks cannot be erased or changed.

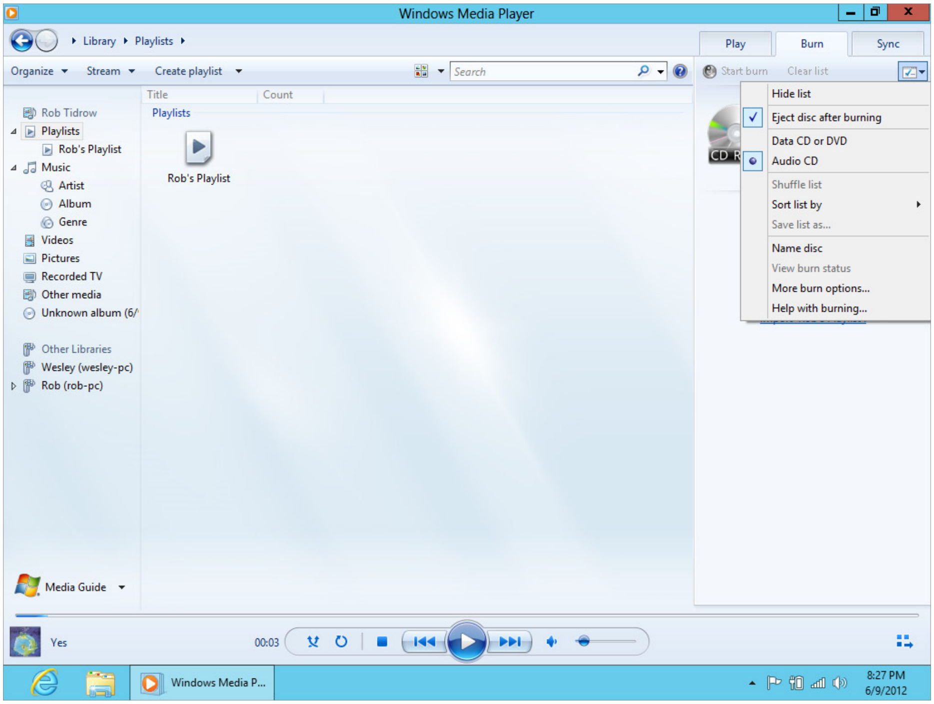
Choosing music disk options

The first step in creating a music CD is to specify which type of disk you want to create, and perhaps some other options. In Media Player, click the Burn tab, and then click Burn Options to see the menu shown in Figure 24.29. Choose options as summarized in the following list:

- **Hide List:** Hide the burn list.
- **Eject Disc After Burning:** Have the CD ejected automatically when it's ready for use. This is especially useful when burning multiple CDs from a single Burn list.
- **Data CD Or DVD:** Choose this option if you want to create a music CD or DVD that plays only on computers and devices that are capable of playing non-traditional music CDs.
- **Audio CD:** Create the type of CD that all stereos and players can play. For best results, use an 80-minute Audio CD-R disk.
- **Name Disc:** Specify a name for the disk.
- **More Burn Options:** Choose this option to choose additional options described following this list.
- **Help with Burning:** Choose this option for help with burning music CDs.

FIGURE 24.29

Burn options


Windows Media Player
Library ▸ Playlists ▸
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Start burn
Clear list
Title
Count
Playlists
Rob's Playlist
Rob Tidrow
Playlists
Rob's Playlist
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Hide list
✓ Eject disc after burning
Data CD or DVD
● Audio CD
Shuffle list
Sort list by
Save list as...
Name disc
View burn status
More burn options...
Help with burning...
Yes
00:03
Windows Media P...
8:27 PM
6/9/2012

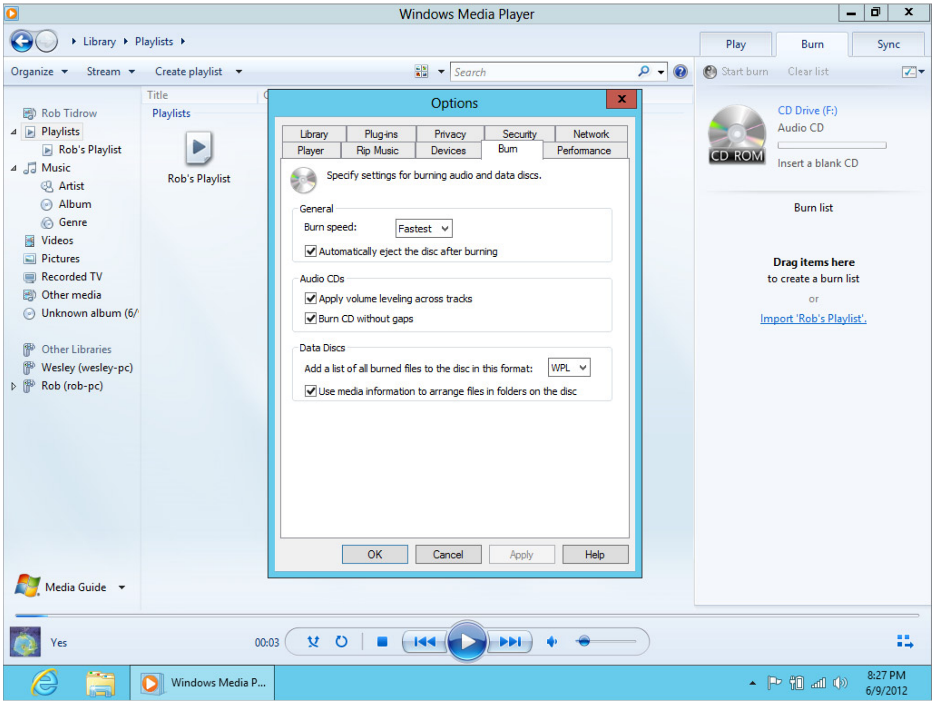
Choosing More Burn Options takes you to the Burn tab of Media Player's Options dialog box, shown in Figure 24.30. Most of the options duplicate options on the menu. The ones that are unique are summarized in the following list.

- **Burn Speed:** The default setting is Fastest. But if you have problems burning disks, or the sound quality isn't up to par on the disks you burn, consider reducing this to a slower speed.
- **Automatically Eject The Disc After Burning:** Instruct Windows to open the disc tray after the CD burning completes.
- **Apply Volume Leveling Across Tracks:** Ensure that the volume of each song is the same when listening to the finished CD.
- **Burn CD Without Gaps:** Omit the two-second gap normally inserted between audio tracks.
- **Add A List Of All Burned Files To The Disc In This Format:** Choose WPL if your player can read Windows playlists. Choose M3U if your player can only read MP3-style playlists.

- **Use Media Information To Arrange Files In Folders On The Disc:** If selected, items on the CD will be organized into folders. If you are unsure about whether or not your player can handle folders, clear the check box for this option.

FIGURE 24.30

Burn tab of the Options dialog box


Windows Media Player
Library
Playlists
Organize
Stream
Create playlist
Search
Play
Burn
Sync
Start burn
Clear list
Title
Rob Tidrow
Playlists
Rob's Playlist
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Unknown album (6/
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
Rob's Playlist
Options
Library
Plug-ins
Privacy
Security
Network
Player
Rip Music
Devices
Burn
Performance
OK
Cancel
Apply
Help
CD Drive (F:)
Audio CD
CD ROM
Insert a blank CD
Burn list
Drag items here
to create a burn list
or
Import 'Rob's Playlist'.
Yes
00:03
Windows Media P...
8:27 PM
6/9/2012

Specify settings for burning audio and data discs.

General

Burn speed: Fastest

☑ Automatically eject the disc after burning

Audio CDs

☑ Apply volume leveling across tracks

☑ Burn CD without gaps

Data Discs

Add a list of all burned files to the disc in this format: WPL

☑ Use media information to arrange files in folders on the disc

Click OK in the Options dialog box to save any settings you changed. With your options selected and squared away, you're ready to choose which songs you want to copy to your custom CD.

Choosing songs to put on the CD

The skills needed to choose songs to put on a CD are the same as those for creating a custom playlist. You can drag songs individually, or you can drag an entire album or other category. But you have to make sure you're dragging to the Burn list, not just any playlist. Here's the basic process:

1. Click the Burn tab to make sure you're viewing the Burn list.
2. If your Burn list contains songs from a previously burned CD and you want to create a new one, click Clear List at the top of the Burn list. Click the Burn

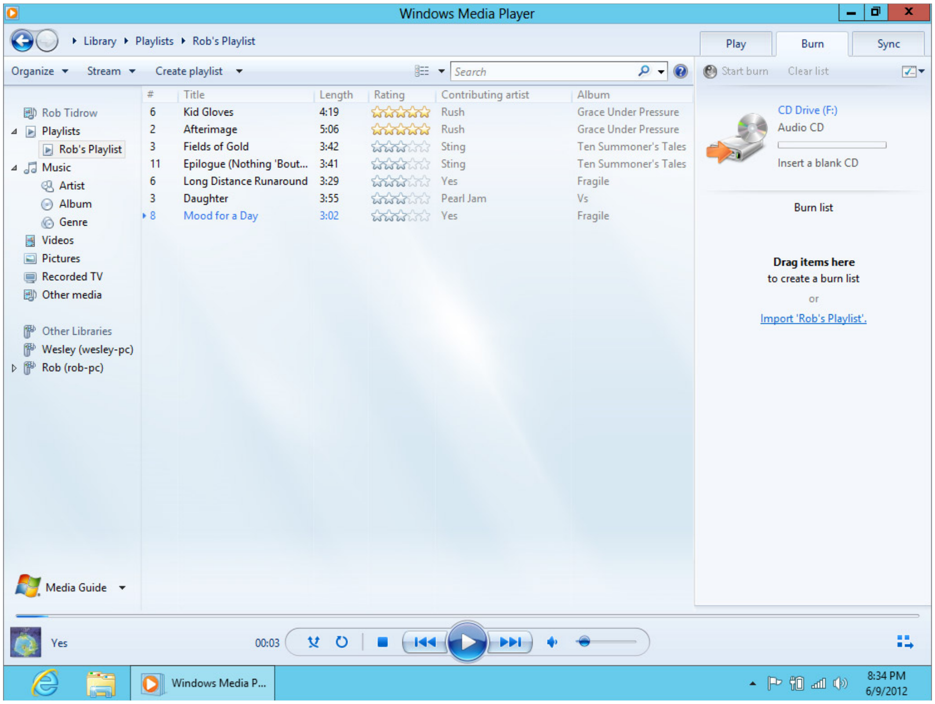
Options button and choose Audio CD if you're burning a music CD for stereos. Otherwise, you can choose Data CD or DVD if you're creating a music disk for computers and appropriate players.

3. Use a felt-tip pen or disk labeler to write the name of your custom CD on a blank CD. Then put that CD in your CD drive.

Your Media Player window should look something like Figure 24.31. The songs that appear in the center Contents pane will, of course, be songs you have in your own library. How your icons look depends on what category you're viewing and what option you've selected from the View Options drop-down list.

FIGURE 24.31

Ready to copy songs to a Burn list


Windows Media Player
Library
Playlists
Rob's Playlist
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Start burn
Clear list
Rob Tidrow
Playlists
Rob's Playlist
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Other Libraries
Wesley (wesley-pc)
Rob (rob-pc)
Media Guide
CD Drive (F:)
Audio CD
Insert a blank CD
Burn list
Yes
00:03
Windows Media P...
8:34 PM
6/9/2012

#	Title	Length	Rating	Contributing artist	Album
6	Kid Gloves	4:19	★★★★★	Rush	Grace Under Pressure
2	Afterimage	5:06	★★★★★	Rush	Grace Under Pressure
3	Fields of Gold	3:42	★★★☆☆	Sting	Ten Summoner's Tales
11	Epilogue (Nothing 'Bout...	3:41	★★★☆☆	Sting	Ten Summoner's Tales
6	Long Distance Runaround	3:29	★★★☆☆	Yes	Fragile
3	Daughter	3:55	★★★☆☆	Pearl Jam	Vs
8	Mood for a Day	3:02	★★★☆☆	Yes	Fragile

Drag items here
to create a burn list
or
Import 'Rob's Playlist'.

At this point, just drag the songs you want to burn to your custom CD to the Burn list, or right-click any song title and choose Add To Burn List. As you add songs, the indicator at the top of the Burn list keeps you informed of how much space will be used on the CD. You can keep adding songs until the disk capacity is exhausted. Any additional songs you add at that point are added to a new disk. Media Player numbers the disk sequentially in the list.

TIP
Clicking the Length column heading sorts songs from longest-to-shortest or vice versa. When you have little time left on a CD, that order can make it easy to find a song that will fit.

Options that apply to custom playlists also apply to the Burn list. For example, to remove a song from the Burn list, right-click its title and choose Remove From List. To change the order of songs, click Burn Options, choose Sort List By, and choose a sort option. Or, drag any song title up or down within the list.

When you're happy with the songs you've selected and their order, you're ready to burn the CD.

Creating the disk

When the Burn list contains all the songs you want to copy to the CD, click the Start Burn button at the top of the Burn list. Then wait. How long it takes depends on the type of CD you're creating, the speed of your drive, and other factors. The status column in the Contents pane and an indicator below the Burn list keep you apprised of progress.

When the CD is finished, remove it from the CD drive. If you created a standard audio disk, you can insert and play it in a stereo as you would any other disk. If you created a data disk, you can play it in any device that supports the type of disk you created.

Saving a Burn list

It's a good idea to save each Burn list you create. That way, if you ever want to create another copy of the same CD, you can just open the saved Burn list. To save a Burn list, click the Burn Options button and choose Save List As. Change the name to something that describes the Burn list and click Save. Then, to create a new Burn list, click the Clear List Pane button.

Copying Music to Portable Devices

A portable device is an MP3 player or similar device that lets you take your music with you. To put songs (or other media) on your portable device, you *sync* songs from Media Player's library to the device. You can put any songs you wish onto your player. The only limit is the storage capacity of the device.

Windows Media Player works with many MP3 players. However, it does not work with the Apple iPhone, iPod, or iPad (you use iTunes to sync to those). Nor does it work with some older devices.

TIP

See "Converting file types" later in this chapter for tips on using iTunes files with Windows Media Player.

If you don't already have a portable device but are thinking of getting one, visit `http://windows.microsoft.com/en-US/windows/products/windows-media-player` and click the Find Devices That Are Compatible link (below the "Top Solutions" heading on the web page). There you can see the full range of devices that work with Media Player.

Different devices work a little differently. So if you already have a device, the first step is to learn the basics of using it and connecting it to your computer. That information you can get only from the instructions that came with the device. Despite the differences among devices, we can tell you generally how synchronization works with Media Player.

The first step is to open Windows Media Player and click the Sync tab. Then connect your device to the computer and turn it on. If a dialog box opens asking you to name the device, type in a name of your own choosing and click Finish. What happens next depends on the storage capacity of the device:

- If the device capacity is 4GB or greater, and your media library can fit within that capacity, Media Player automatically copies your entire library to the device. Each time you connect the device in the future, Media Player copies any new songs you've acquired since the last connection so that the device stays in sync with your library.
- If the device capacity is less than 4GB, or your library is too large to fit in the device, nothing is copied automatically. But you can manually copy any songs you like to the device.

You can change what happens when you connect your device. We'll get to that in a moment. First, let's look at how you manually choose songs to put on your device.

Manual syncing

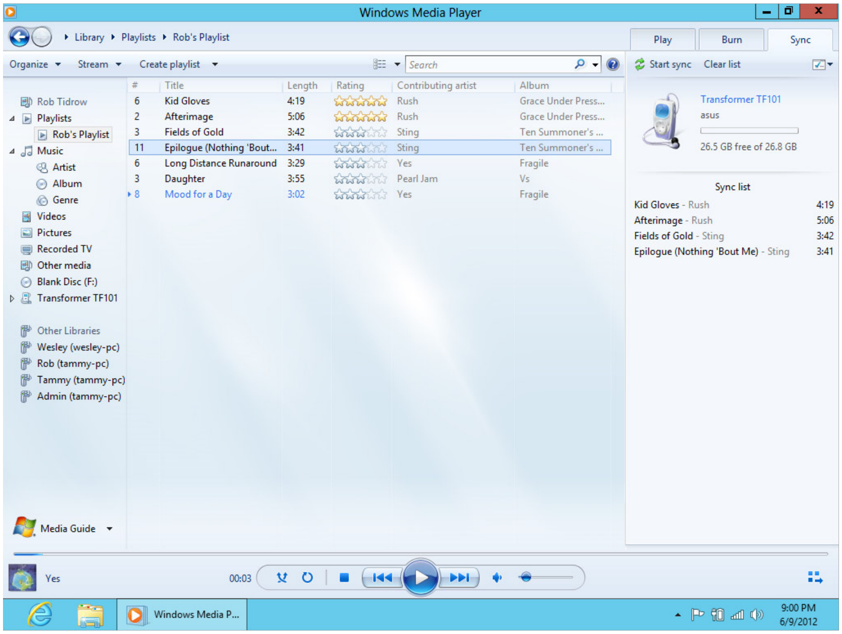
When your device is connected to your computer and you want to choose songs to copy to the device, click the Sync tab. The List pane at the right side of the program window shows the storage capacity of the device, and the amount of space that's currently on the device. Beneath that is an empty playlist, called the Sync list.

To add songs to the device, you need to drag them from the contents pane to the Sync list, just as you would when burning a CD or creating a custom playlist. As always, you can select multiple songs and drag them all at once. You can also right-click any song, album, icon, or category name and choose Add To Sync List.

As you add songs, an indicator near the top of the Sync list shows you how much space you have remaining. If the indicator turns red and shows "Filled," you've gone over the limit. To remove a song from the Sync list, right-click its title and choose Remove From List. Do so until the indicator turns green again. Figure 24.32 shows an example with many songs already chosen and about 26.5GB of space left on a portable player.

FIGURE 24.32

Songs added to the Sync list


Windows Media Player
Library
Playlists
Rob's Playlist
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Start sync
Clear list
Rob Tidrow
Playlists
Rob's Playlist
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Blank Disc (F:)
Transformer TF101
Other Libraries
Wesley (wesley-pc)
Rob (tammy-pc)
Tammy (tammy-pc)
Admin (tammy-pc)
Media Guide
Yes
00:03
Windows Media P...
9:00 PM
6/9/2012

#	Title	Length	Rating	Contributing artist	Album
6	Kid Gloves	4:19	★★★★★	Rush	Grace Under Press...
2	Afterimage	5:06	★★★★★	Rush	Grace Under Press...
3	Fields of Gold	3:42	★★★☆☆	Sting	Ten Summoner's ...
11	Epilogue (Nothing 'Bout...	3:41	★★★☆☆	Sting	Ten Summoner's ...
6	Long Distance Runaround	3:29	★★★☆☆	Yes	Fragile
3	Daughter	3:55	★★★☆☆	Pearl Jam	Vs
8	Mood for a Day	3:02	★★★☆☆	Yes	Fragile

Transformer TF101
asus
26.5 GB free of 26.8 GB

Sync list

Kid Gloves - Rush	4:19
Afterimage - Rush	5:06
Fields of Gold - Sting	3:42
Epilogue (Nothing 'Bout Me) - Sting	3:41

As always, you can arrange songs in the Sync list by dragging them up or down. Optionally, click Sync List, choose Sort, and choose a sort order. When you're happy with the songs you've selected and their order, click the Start Sync button at the bottom of the Sync list.

The Contents pane of Media Player shows the synchronization progress as songs are copied to the device. When the Status column shows "Synchronized to Device" for every song, you're done. You can disconnect the device from the computer, plug in your headphones, and take your music with you.

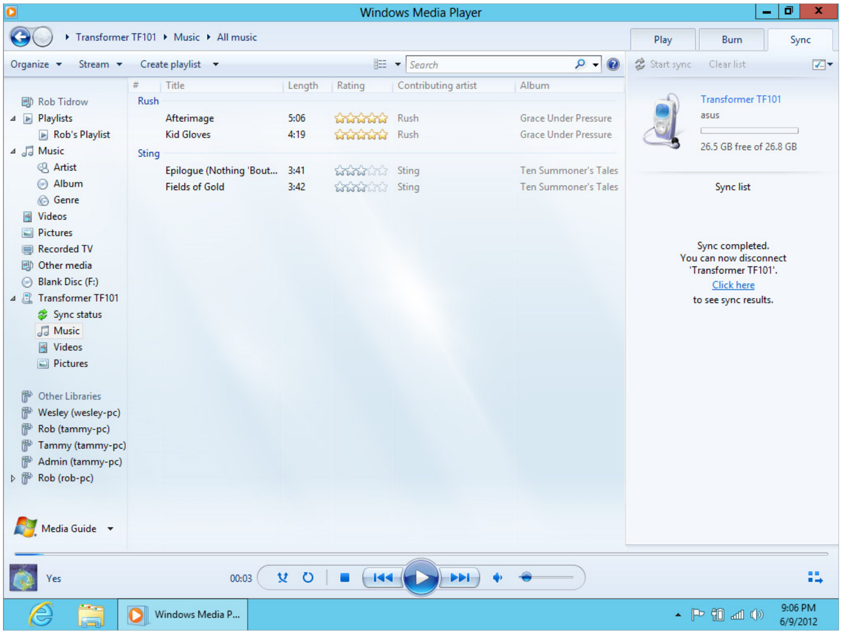
Managing songs on a device

Portable media players are much more flexible than CDs. For example, you can delete individual songs from a portable device and replace them with other songs. When your device is connected, it shows up as its own set of categories in the Navigation pane. When you click a category name under the device name, the Contents pane to the right shows the contents of the device only, not the contents of your entire library.

Figure 24.33 shows an example. In the Navigation pane at left, we've clicked the Transformer TF101 device and clicked the All Music category name. The Contents pane to the right is showing songs that are currently on the synced device. When viewing songs in that manner with your own device, you can right-click any song title and choose Delete to remove it from the device.

FIGURE 24.33

Music on an MP3 player



Windows Media Player
Transformer TF101 ▸ Music ▸ All music
Play
Burn
Sync
Organize ▾
Stream ▾
Create playlist ▾
Search
Start sync
Clear list
Rob Tidrow
Playlists
Rob's Playlist
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Blank Disc (F:)
Transformer TF101
Sync status
Music
Videos
Pictures
Other Libraries
Wesley (wesley-pc)
Rob (tammy-pc)
Tammy (tammy-pc)
Admin (tammy-pc)
Rob (rob-pc)
Media Guide ▾
Transformer TF101
asus
26.5 GB free of 26.8 GB
Sync list
Yes
00:03
Windows Media P...
9:06 PM
6/9/2012

#	Title	Length	Rating	Contributing artist	Album
Rush					
	Afterimage	5:06	★★★★★	Rush	Grace Under Pressure
	Kid Gloves	4:19	★★★★★	Rush	Grace Under Pressure
Sting					
	Epilogue (Nothing 'Bout...	3:41	★★★☆☆	Sting	Ten Summoner's Tales
	Fields of Gold	3:42	★★★☆☆	Sting	Ten Summoner's Tales

Sync completed.
You can now disconnect
'Transformer TF101'.
Click here
to see sync results.

Manual syncing is easy (once you've played around with it a bit). Most people like to choose exactly what's on their portable player so manual syncing is also the most commonly used method. To use auto syncing, you need to enable automatic syncing and specify what syncs automatically. Let's look at that next.

Auto-syncing devices

Auto-sync is a method of keeping a portable player up to date with whatever content is currently available in your Media Player library. If your device doesn't have enough capacity to store your entire library, exactly what you end up with can be somewhat arbitrary. The first step is to connect the device to the computer and make sure it's turned on.

Next, click the Sync tab and then click Sync Options, point to your device name, and choose Set Up Sync. If you have not set up the device previously, you'll see the Windows Media Player - Device Setup dialog box, which asks if you want to sync temporarily (this session only) or permanently. If you choose the latter, you'll have additional options available for syncing, including the capability to specify which playlists are synced.

The Device Setup dialog box opens. The left column shows available playlists. The right column shows playlists that are currently used to sync songs to the device. To remove a playlist from the right column, click its name and choose Remove.

To add a playlist to the right column, click its name in the left column and click Add. To see Auto Playlists specifically designed for syncing, click the My Playlists button under Available Playlists and choose Sync Playlists.

If no playlist defines the kinds of songs you want to sync automatically, you can create your own. Click New Auto Playlist and give your playlist a name. For example, to make an Auto Playlist that copies new songs added to your library in the last week, create a criterion that specifies Date Added To Library Is After Last 7 Days.

Give the new playlist a name, perhaps New This Week, and save it. Then click the Add button to copy it from Available Playlists to Playlists To Sync. If that's the only playlist you put in the right column, then each time you connect your device, Media Player copies only songs that you've added to your library within the last week.

Optionally, choose Shuffle What Syncs. If you do, each time you connect the device, files that are currently on the device are removed automatically and replaced with songs that match the criteria of your selected Auto Playlists. So each time you connect the device, you automatically get however many songs your playlist provides added to the device.

Click Finish when you're done, and Media Player syncs based on your selections. Remove the device when the syncing is finished. Any time you want to change the contents of your player, just connect it to the PC and click the Finish button.

Choosing between manual and auto sync

You can choose whether you want to use manual sync or auto sync at any time. Just connect your device, click the arrow under Sync, click the device name, and choose Set Up Sync. To use manual syncing, clear the checkmark next to Sync This Device Automatically. To enable auto syncing, select (check) that same check box. Then click Finish.

Setting player options

To see other options that your player supports, connect the player, right-click its name in the Navigation pane, and choose Properties. A Properties dialog box for the device opens. The options available to you will depend on the capabilities of your player. If you're not sure what an option in the dialog box means, check the manual that came with your device or click the Help button in the dialog box for more information.

NOTE

Most portable players are USB mass storage devices. Once connected, these show up as a disk drive in your Computer folder. You can see the current contents of your device by opening its icon in your Computer folder. You can also erase any songs from the device using the same techniques you use to erase files from folders and drives.

Fun with skins

Whenever you're using a program, the part that you see on the screen is just one snowflake on the tip of the proverbial iceberg. The real "guts" are in memory, and invisible. The part you see on the screen is called the *user interface*, abbreviated UI, and often referred to as simply the *interface* or *skin*. Some programs, including Windows Media Player, allow you to change the interface without changing the functionality of the program.

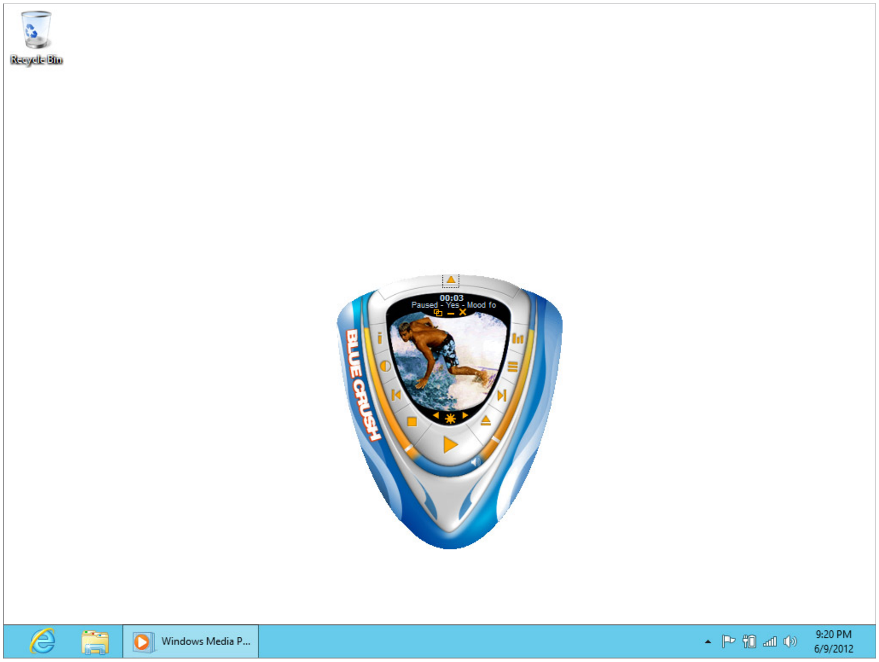
Windows Media Player comes with several skins for you to try out. These skins are for Now Playing mode, not for Library mode. To see them if Media Player is in Now Playing mode, press Alt to open the menu, and choose View ➪ Skin Chooser. If Media Player is in Library mode, right-click the area to the right of the breadcrumb trail, and then choose View ➪ Skin Chooser.

Click each skin name in the left pane to get a preview of how Media Player will look if you apply the skin. To download additional free skins, click the More Skins button above the left column. When you find a skin you like, click the Apply Skin button.

Figure 24.34 shows an example using the Blue Crush skin. Once you're in a skin, point to various symbols and buttons on it to figure out what's up. You'll see the name of the control in a tooltip.

FIGURE 24.34

Media Player in the Blue Crush skin



When you're in the normal Full mode, you can click the Switch To Skin Mode button in the lower-left corner of Media Player's program window to switch to a skin. From the keyboard, press Ctrl+2 to switch to Skin mode. Press Ctrl+1 to switch back to Full mode. To get out of the Skin Chooser in Full mode, click the Back button.

Extending Media Player with Plug-ins

Plug-ins are optional add-on capabilities that you can purchase or, in some cases, download for free. A plug-in might be as simple as a new visualization or skin. Or it could be an audio or DVD driver or enhancer that extends the capabilities of Media Player. Some plug-ins add capabilities to Media Player. It all depends on what you download and install. To see your options, press Alt and then click Tools ➪ Download Plug-Ins.

Some plug-ins are free, some aren't. Once you're at the site for downloading plug-ins, you'll need to review what's available and decide for yourself what's of value to you.

To manage any plug-ins you acquire, click Tools ➪ Plug-ins and choose Options.

Converting File Types

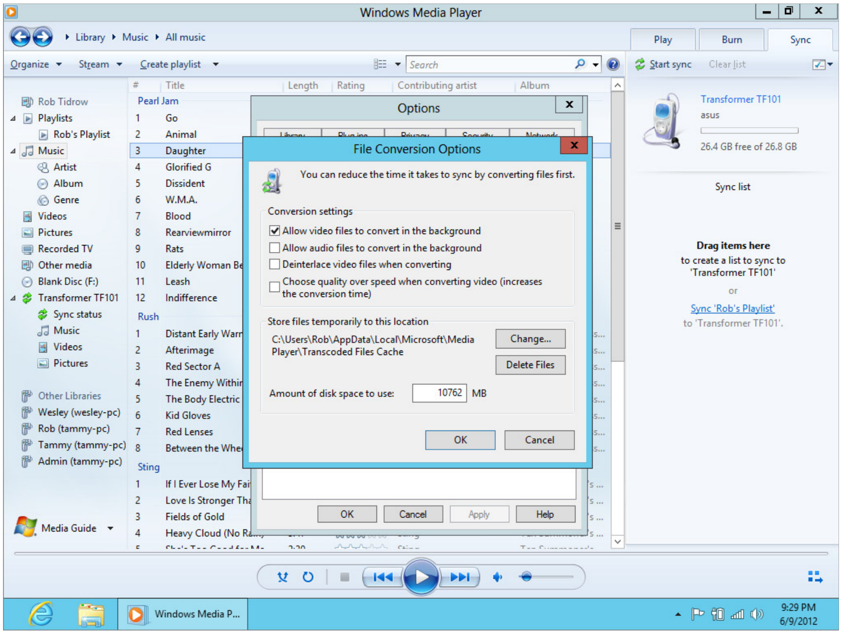
Suppose you've ripped a bunch of CDs to WMA format and then acquire a portable media device that only plays MP3s. Do you need to rip all those same CDs again? The answer is no. Media Player 12 can automatically convert files as it syncs them to your portable device. For example, it can convert WMA files to MP3 format. It can also convert video files.

To configure file conversion options, press Alt and then click Tools ➪ Options and click the Devices tab. Then, click the Advanced button to open the File Conversion Options dialog box (see Figure 24.35).

In the File Conversion Options dialog box, you can specify whether video or audio file conversion happens in the background. Conversion in the background can speed up syncing. By default, background conversion is on for video and off for audio.

FIGURE 24.35

File Conversion Options dialog box


Windows Media Player
Library ▸ Music ▸ All music
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Start sync
Clear list
Title
Length
Rating
Contributing artist
Album
Rob Tidrow
Playlists
Rob's Playlist
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Other media
Blank Disc (F:)
Transformer TF101
Sync status
Music
Videos
Pictures
Other Libraries
Wesley (wesley-pc)
Rob (tammy-pc)
Tammy (tammy-pc)
Admin (tammy-pc)
Media Guide
Pearl Jam
1 Go
2 Animal
3 Daughter
4 Glorified G
5 Dissident
6 W.M.A.
7 Blood
8 Rearviewmirror
9 Rats
10 Elderly Woman Be
11 Leash
12 Indifference
Rush
1 Distant Early Warr
2 Afterimage
3 Red Sector A
4 The Enemy Within
5 The Body Electric
6 Kid Gloves
7 Red Lenses
8 Between the Whe
Sting
1 If I Ever Lose My Fai
2 Love Is Stronger Tha
3 Fields of Gold
4 Heavy Cloud (No Ra
Options
OK
Cancel
Apply
Help
Transformer TF101
asus
26.4 GB free of 26.8 GB
Sync list
Drag items here
to create a list to sync to 'Transformer TF101'
or
Sync 'Rob's Playlist'
to 'Transformer TF101'.
Windows Media P...
9:29 PM
6/9/2012

File Conversion Options

You can reduce the time it takes to sync by converting files first.

Conversion settings

☑ Allow video files to convert in the background
☐ Allow audio files to convert in the background
☐ Deinterlace video files when converting
☐ Choose quality over speed when converting video (increases the conversion time)

Store files temporarily to this location

C:\Users\Rob\AppData\Local\Microsoft\Media Player\Transcoded Files Cache

Change...
Delete Files

Amount of disk space to use: 10762 MB

OK
Cancel

You can also specify a better quality for video by choosing the Choose Quality Over Speed When Converting Video option. If you need more space for temporary files created during conversion, click the Change button and choose a different location. You can also specify the amount of disk space to allocate for the temporary files and delete any temporary files currently in the temporary location.

For other types of conversion options, consider searching any download site for the type of conversion you need to perform. For example, you might go to `www.tucows.com` or `www.download.com`. Or, you could use a more generic search engine such as Bing or Google. Type in the words that best define the type of conversion you need to perform, such as **Convert WMA MP4**. We're also partial to Pocket DVD Studio at `www.pqdvd.com`. It has versions to convert DVDs for various devices, including PSP, iPad, iPod, and others.

Music, Metadata, and Searches

Earlier in this chapter you discovered how you can store media information such as artist, album title, genre, and so forth with songs. That media information is a form of *metadata*. Metadata, in turn, is information *about* a file, and it doesn't apply only to music. Pictures, videos, Microsoft Office documents, and many other file types support metadata.

TIP

Whether or not you are in Windows Media Player, you can search for and group things based on metadata in any file.

You don't have to be in Windows Media Player to take advantage of metadata. The Search features in Windows 8 allow you to search and group things based on metadata in any file. For example, if you select Search from the Charms Bar and type an artist's name into the Search box, songs by that artist show up in the Files window (click Files under the search box).

You're also not limited to searching for one thing. You can specify multiple criteria separated by the words `AND` or `OR` (uppercase letters). For example, here's a search that finds all tracks in which the composer is either Beethoven or Mozart: **composer:beethoven OR composer:mozart**.

TIP

You might think that it should be `composer:Beethoven AND composer:Mozart`**. But it doesn't work that way. A song can't have both Beethoven** ***and*** **Mozart as the composer. You're looking for tracks that have either Beethoven** ***or*** **Mozart as the composer.**

If you want to locate all MP3 songs that have Nickelback as an artist and a year greater than 2010, the following search would do the trick: **type:mp3 AND artist:nickelback AND year: > 2010**.

For experienced users, this is a far cry from the old days of searching for filenames. But it's not the kind of thing you master in a minute. Searches are successful only when you know how to construct them correctly. See Chapter 29, "Searching for Files and Messages on Your Computer," and Chapter 30, "Metadata and Power Searches," for the full story.

Wrap-Up

This chapter looked at the Windows Media Player main music capabilities, but all of its capabilities haven't been covered yet. In the next chapter, you learn about using Windows 8 with DVDs and videos. If you have an edition of Windows 8 that includes Media Center, you can also use Media Center to play songs from your media library. See Chapter 26 for the goods on Media Center. The following points were covered in this chapter:

- Controlling sound volume on your computer is a necessary first step to playing music.

- The Features taskbar along the top of Media Player's program window provides easy access to all of Media Player's main components.
- The Now Playing mode can show a visualization of music that's playing or the visual content of the playing video or DVD.
- The Navigation pane gives you access to all songs and other media you've downloaded or copied from CDs.
- You can rip (copy) songs from music CDs to your media library.
- You can burn your own custom music CDs.
- You can sync (copy) music to portable media devices.

CHAPTER

25

Working with Video and Photos

IN THIS CHAPTER

Watching video files with the Video app

Watching video files with Media Player

Internet video

Managing photos with Media Player

Windows 8 provides two tools to help you play back video files stored on your computer: the Windows 8 Video app and Windows Media Player. The Video app provides basic playback features, while Windows Media Player includes ways to create playlists and more. You can even use Media Player to manage photos and copy them to portable devices.

If you have Media Center with your version of Windows 8, you can use Media Center or Media Player to manage and watch recorded TV.

Watching Video Files

A video file is a file on your hard disk that contains video and audio. These files include videos you capture from video cameras, smart phones, digital cameras, recorded TV shows, and videos you download from the web. Video files come in many formats, and thanks to the Windows 8 Video app and Media Player 12's support for additional formats, Windows can now play almost any type of video. The following sections will help you understand how to manage and play videos in the Video app and Media Player.

NOTE

Unlike previous versions of Media Player, Windows 8's Media Player 12 application does not support playback of DVD movies. For information on playing DVD movies in Windows 8, see Chapter 26.

Using your Videos library

TIP

You can store video files in any folder you want. But to stay organized, you may want to put video files that are private in your user account's My Videos folder. Video files that you want to share with all users should go into the Public Videos folder. Both folders offer similar features. So before we get to playing videos, take a moment to look at your Videos folder.

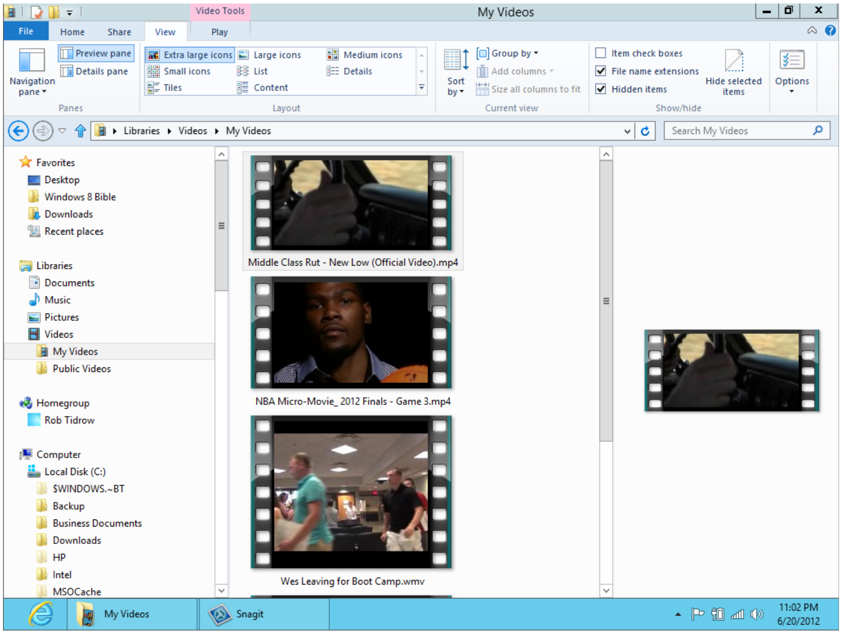
To open your Videos folder, start File Explorer. Then click Videos in the Navigation pane. Figure 25.1 shows an example where there are already some videos and other items in the Videos folder. Only the icons that look like thumbnails are actual videos. When you click one of those, it shows in the Preview pane (if the Preview pane is open).

TIP

To open and close optional panes, click the Organize button and choose Layout. See Chapter 28 for the full story on folders and panes.

FIGURE 25.1

Videos folder example


Video Tools
My Videos
File
Home
Share
View
Play
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Tiles
Content
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Item check boxes
File name extensions
Hidden items
Hide selected items
Options
Show/hide
Libraries
Videos
My Videos
Search My Videos
Favorites
Desktop
Windows 8 Bible
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
My Videos
Public Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
$WINDOWS.~BT
Backup
Business Documents
Downloads
HP
Intel
MSOCache
Middle Class Rut - New Low (Official Video).mp4
NBA Micro-Movie_ 2012 Finals - Game 3.mp4
Wes Leaving for Boot Camp.wmv
My Videos
Snagit
11:02 PM
6/20/2012

If you want to see filename extensions of video files but they're not currently visible, click the View tab and then click Options. In the Folder Options dialog box, click the View tab, clear the checkmark next to Hide Extensions For Known File Types, and click OK.

Recorded TV

Recorded TV shows are video files stored in the `.dvr-ms` (Digital Video Recording — Microsoft) format. You use Media Center (see Chapter 26, "Using Media Center") to define times and channels to record, as on a VCR or DVD recorder. You can also decide where you want to store recorded TV shows in Media Center. And of course, you can watch recorded TV shows in Media Center.

You can also watch recorded TV shows in Windows Media Player. To view your recorded TV shows in Media Player, click the Recorded TV branch in the Navigation pane.

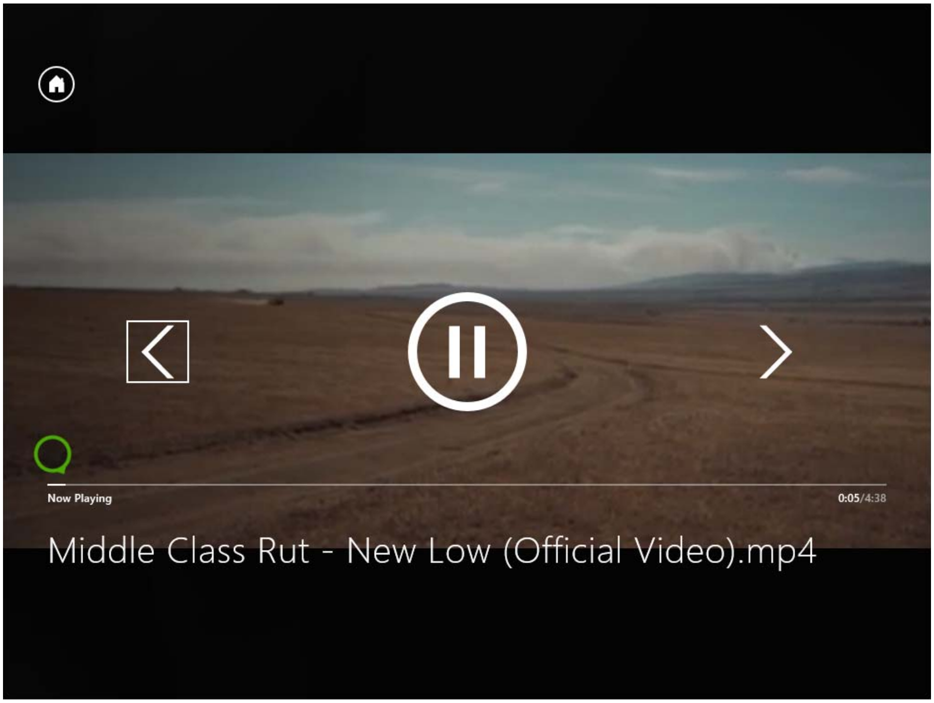
If some of your recorded TV shows don't show up, Media Player may not be monitoring their folders. Launch Media Player while on the Windows Start screen by typing **media**. Click Windows Media Player on the Apps screen. In Media Player, click Organize ➪ Manage Libraries ➪ Recorded TV. In the resulting Recorded TV Library Locations dialog box, click the Add button to add folders that contain recorded TV to the list of the monitored folders.

Playing videos using Video App

To watch a video using the Windows 8 Video app, open File Explorer and right-click a video you want to play. Choose Open With and select Video. Or, if Video is the default video player, you simply have to double-click that video from File Explorer and Windows automatically launches the Video app with your video paying. Figure 25.2 shows the Video app playing back a selected video.

FIGURE 25.2

Video app playing a video



Notice in Figure 25.2 that the video controls display to help you control the video playback. These controls include the following:

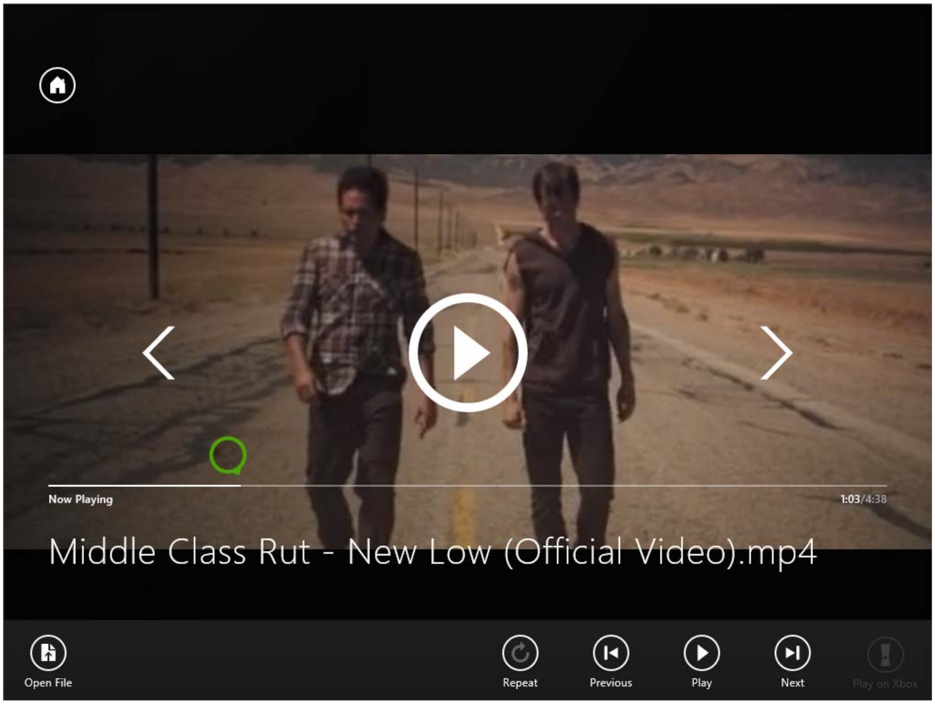
- **Rewind:** Enables you to skip back to a previously played section of the video.
- **Pause/Play:** During playback, the Pause button appears so you can halt the playback. While paused, the Play button appears so you can restart the playback of the video.
- **Fast Forward:** Enables you to skip forward in the video.
- **Now Playing Bar:** Shows a progress timeline of the video. Slide the Now Playing controller (usually a green circle) forward and backward to move the video to a specific place on the timeline.

If you do not click on any of these playback controls, after a few moments they will disappear from view. Bring them back into view by moving the mouse or tapping the screen on a touch screen monitor.

While playing a video, you can display additional tools by right-clicking. Figure 25.3 shows playback and Video app tools at the bottom of the screen. You can click the Open File button to display the Files app to see a list of videos you can play. You also have buttons to repeat, rewind, play, and fast forward.

FIGURE 25.3

Using the Video app to play a video



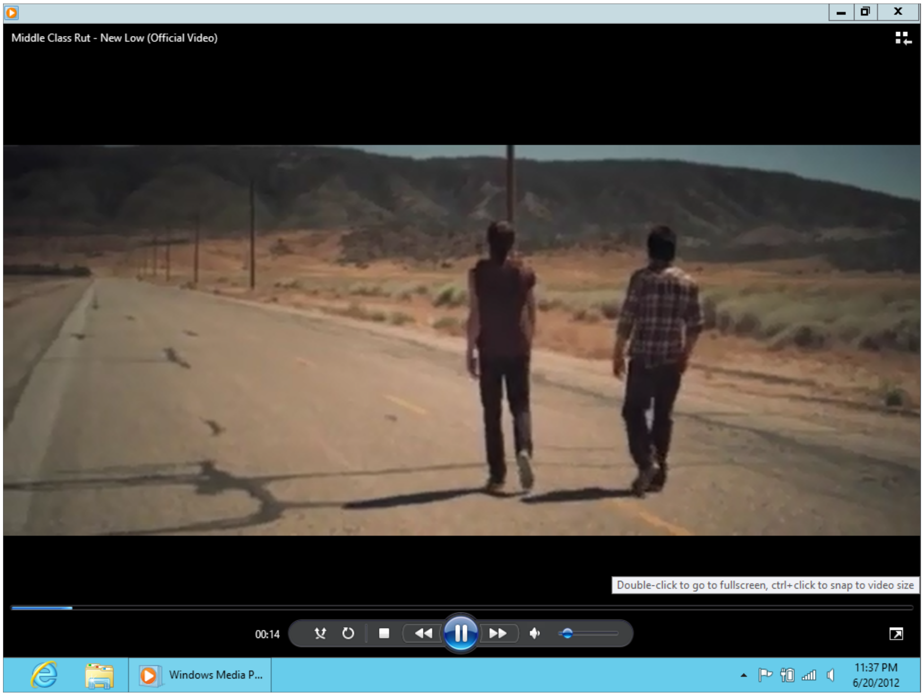
Playing videos using Media Player

To watch a video file in the Media Player, open Media Player (show the Charms Bar, click Search, type **media**, and click Windows Media Player on the Apps screen). If the video is stored in a format supported by Media Player, it should open in Media Player (see Figure 25.4). If it opens in some other program, close that program. Then follow these steps to watch it in Media Player:

1. Right-click the video icon in File Explorer and choose Open With ➪ Choose Default Program.
2. To ensure that files of that type open in Media Player by default, choose Use This App For All Of The Chosen File Types (such as `.mp4`, `.avi`, and so on).
3. Click Windows Media Player (or whatever program you want to set as the default).

FIGURE 25.4

Using Media Player to play a video


Middle Class Rut - New Low (Official Video)
Double-click to go to fullscreen, ctrl+click to snap to video size
00:14
Windows Media P...
11:37 PM
6/20/2012

Adding videos to your Media Library

You can store information about your video files in Media Player's library. Depending on how Media Player is configured, video files from your Videos folder, and perhaps Public Videos folders, should already appear in Media Player. To find out, click Videos in the Navigation pane.

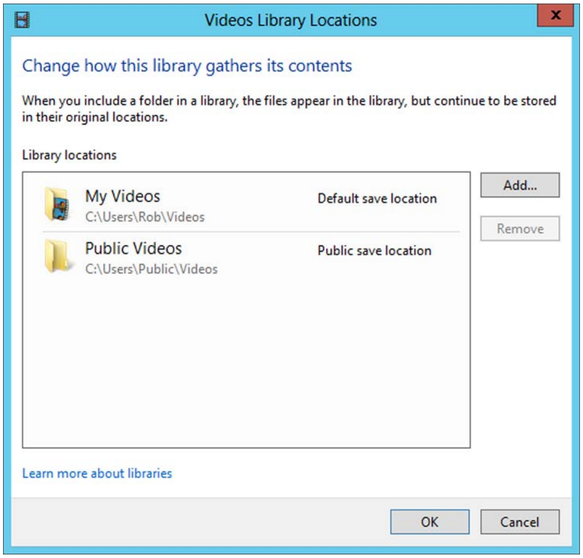
To add video files to your media library, monitor the folders in which they're stored by using the following steps

1. If you're not already in Windows Media Player, open it now.
2. Click Organize ➪ Manage Libraries ➪ Videos. My Videos and Public Videos appear in the Videos Library Locations dialog box by default (shown in Figure 25.5).

3. Click the Add button and navigate to the drive and folder that contains other videos you want to include. Then click Include Folder. Repeat this step for each folder you want to add.
4. Click OK in each open dialog box to save all of your changes.

FIGURE 25.5

Using the Videos Library Locations dialog box


Change how this library gathers its contents

When you include a folder in a library, the files appear in the library, but continue to be stored in their original locations.

Videos Library Locations
Library locations
My Videos
C:\Users\Rob\Videos
Default save location
Public Videos
C:\Users\Public\Videos
Public save location
Add...
Remove
Learn more about libraries
OK
Cancel

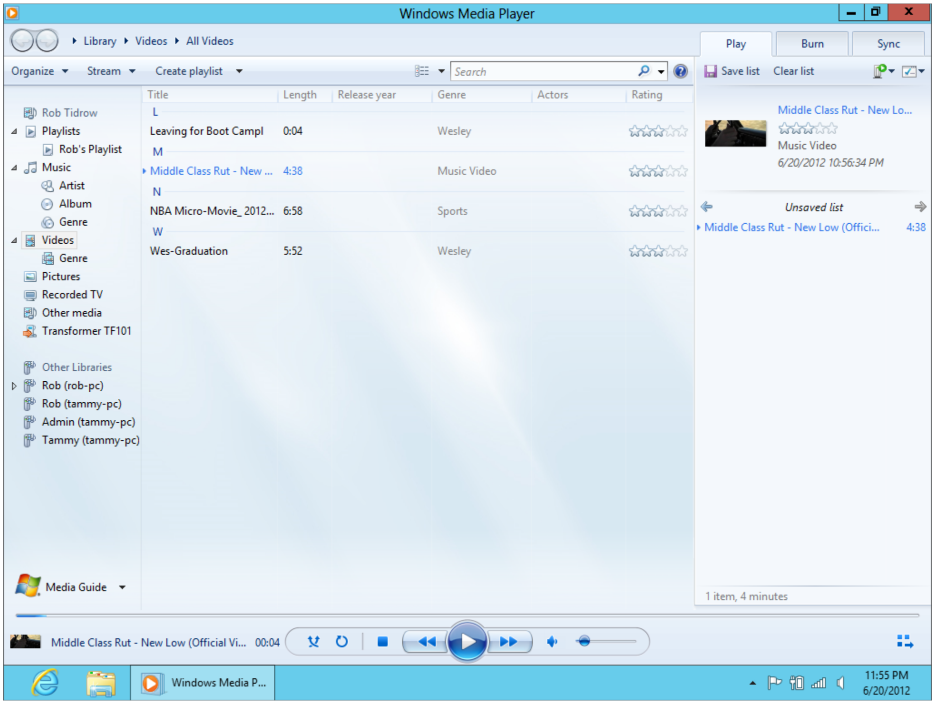
Media files from the folders you specified are added to your library. You can use the View Options button on the toolbar to display icons in Icon, Tile, or Details view. You also can add your own media information to better organize your videos by genre, director, actor, or whatever. To add a genre to a video, choose the Details view, and then click in the Genre column and type a tag, such as SciFi, Sports, Nature, and so on.

By default, the Navigation pane doesn't show Genre as an option under the Videos branch. To add Genre, click Organize ➪ Customize Navigation Pane to open the Customize Navigation Pane dialog box. Under the Videos branch, place a check beside Genre and any other items you want to show, and click OK.

Figure 25.6 shows an example where we've already categorized video files by Genre. We clicked the Genre icon in the Navigation pane at the left to see video files stacked by categories.

FIGURE 25.6

Video files organized by Genre


Windows Media Player
Library ▸ Videos ▸ All Videos
Play
Burn
Sync
Organize ▾
Stream ▾
Create playlist ▾
Search
Save list
Clear list
Rob Tidrow
Playlists
Rob's Playlist
Music
Artist
Album
Genre
Videos
Genre
Pictures
Recorded TV
Other media
Transformer TF101
Other Libraries
Rob (rob-pc)
Rob (tammy-pc)
Admin (tammy-pc)
Tammy (tammy-pc)
Media Guide ▾
Middle Class Rut - New Lo...
Music Video
6/20/2012 10:56:34 PM
Unsaved list
Middle Class Rut - New Low (Offici... 4:38
1 item, 4 minutes
Middle Class Rut - New Low (Official Vi... 00:04
Windows Media P...
11:55 PM
6/20/2012

Title	Length	Release year	Genre	Actors	Rating
L					
Leaving for Boot Campl	0:04		Wesley		☆☆☆☆☆
M					
Middle Class Rut - New ...	4:38		Music Video		☆☆☆☆☆
N					
NBA Micro-Movie_2012...	6:58		Sports		☆☆☆☆☆
W					
Wes-Graduation	5:52		Wesley		☆☆☆☆☆

Playing videos from your library

Playing videos in Media Player is no different from playing songs. In the library, just double-click the video's title or icon. Or right-click an icon, stack, or category name, and choose Play.

Managing Photos with Media Player

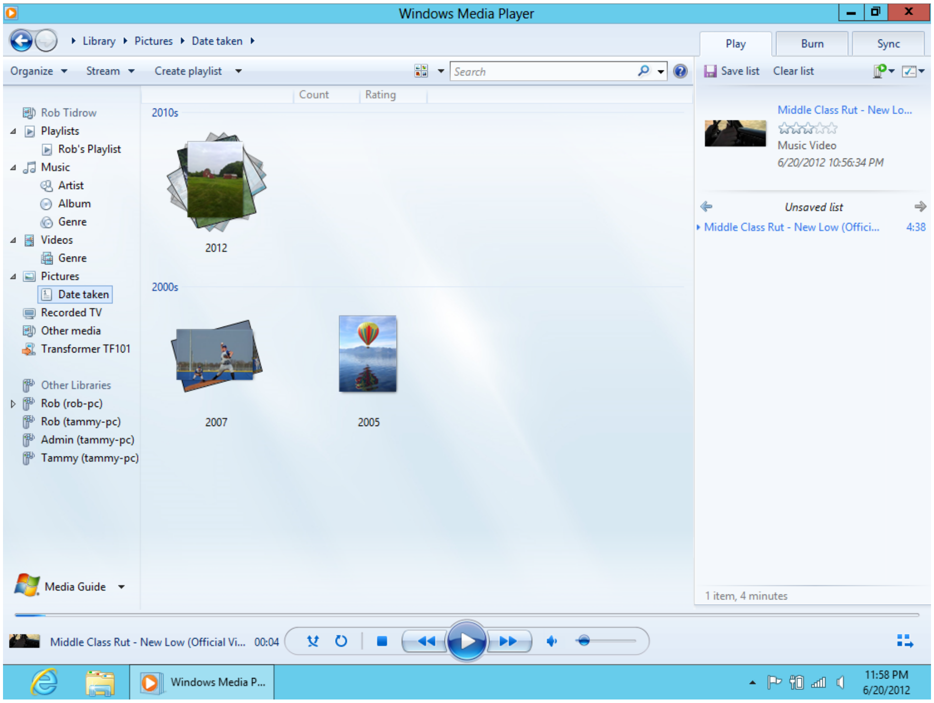
In Chapter 23, "Working with Pictures," you discovered ways to acquire and manage photos with Windows Live Photo Gallery. There's no need to bring that information into Media Player, but you can if you want to. For example, if you have a portable media device that displays pictures, you might want to bring the photos into Media Player so you can sync music and video files.

To view photos in Media Player, the photos need to be in a folder that's monitored by Media Player. Or, you'll need to add that folder to your list of monitored folders. By default, the Pictures library appears in Media Player's Navigation pane but without any options such as Tags or Date Taken. You can add those options by clicking the Organize button in Windows Media Player and choosing Customize Navigation Pane. Scroll down to find Pictures in the list and select the desired options.

To view photos in Media Player, click Pictures in the Navigation pane. Figure 25.7 shows an example where we're viewing photos by Date Taken. Each stack represents a group of photos.

FIGURE 25.7

Viewing photos by Date Taken in Media Player


Windows Media Player
Library ▸ Pictures ▸ Date taken ▸
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Save list
Clear list
Count
Rating
Rob Tidrow
Playlists
Rob's Playlist
Music
Artist
Album
Genre
Videos
Genre
Pictures
Date taken
Recorded TV
Other media
Transformer TF101
Other Libraries
Rob (rob-pc)
Rob (tammy-pc)
Admin (tammy-pc)
Tammy (tammy-pc)
Media Guide
2010s
2012
2000s
2007
2005
Middle Class Rut - New Lo...
Music Video
6/20/2012 10:56:34 PM
Unsaved list
Middle Class Rut - New Low (Offici... 4:38
1 item, 4 minutes
Middle Class Rut - New Low (Official Vi... 00:04
Windows Media P...
11:58 PM
6/20/2012

More on Playlists

In Media Player, you can include videos and photos in any music playlists you create. This is mostly useful for creating Auto Playlists for syncing to devices that support music, photos, and video. (When you play the playlist in Media Player, the videos and photos play in sequence, not simultaneously, so you'll still see only a visualization or album art when music is playing.)

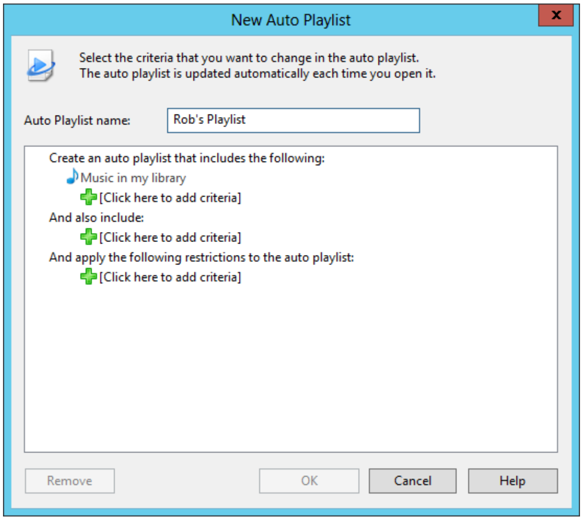
TIP

If you want to create a movie that contains video, photos, and music, use Windows Live Movie Maker. If you want to copy Media Player content to a DVD as a data disk, use the Burn tab in Media Player. Read Windows online help for details on burning files to DVD. Chapter 7 of this book details how to access and search the Windows 8 help system.

To create an Auto Playlist that includes music, photos, and/or videos, click the arrow beside the Create Playlist button in the toolbar and choose Create Auto Playlist. Or, right-click the name of an existing Auto Playlist and choose Edit. In the New Auto Playlist dialog box (as shown in Figure 25.8), name the playlist however you like. Under Music In My Library, add your criteria for music. Then, under And Also Include, set criteria for Pictures, TV, and Video as you see fit.

FIGURE 25.8

Creating an Auto Playlist in Windows Media Player.



Select the criteria that you want to change in the auto playlist.
The auto playlist is updated automatically each time you open it.

Auto Playlist name: Rob's Playlist

Create an auto playlist that includes the following:
Music in my library
[Click here to add criteria]
And also include:
[Click here to add criteria]
And apply the following restrictions to the auto playlist:
[Click here to add criteria]

You can use that Auto Playlist to keep your portable media player up-to-date with media content on your computer on a daily basis. To update manually, connect your device and click the Sync tab. Drag the playlist name from the Navigation pane into the List pane. Then click the Start Sync button.

To use the daily Auto Playlist for automatic syncing, first connect your device. Then right-click the device in the Navigation pane and choose Set Up Sync. Choose Sync This Device Automatically. Then add the Auto Playlist to the Playlists To Sync column. Remove any other playlists that are in that Playlists To Sync column.

TIP

If you want to copy music (only) daily to your portable player, edit the playlist and remove the And Also Include criteria for photos, recorded TV, and video. Just click whichever criterion you want to remove, and then click the Remove button.

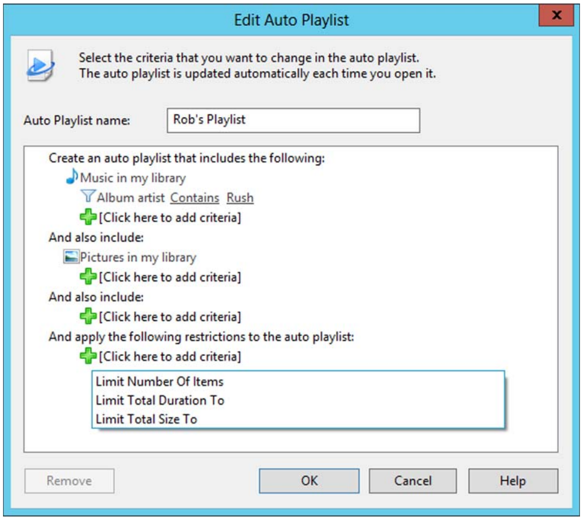
Limiting playlist size

If you discover that your Auto Playlists are too large, containing more content than you can fit on your portable player, you can limit the amount of content the playlist contains. Open the playlist for editing, and at the bottom of the Auto Playlist, click the + sign under And Apply The Following Restrictions To The Auto Playlist. You'll see the options shown in Figure 25.9 and described here:

- **Limit Number Of Items:** Choose this option to limit the number of items the playlist may contain. For example, if you choose 10, the Auto Playlist will list only the first 10 items that meet the criterion.
- **Limit Total Duration To:** Choose this option to set a maximum time limit to match the time duration of the disk to which you'll be copying items. For example, if you'll be copying playlist items to an Audio CD, the time limit is 80 minutes.
- **Limit Total Size To:** When syncing to portable devices, choose this option to limit the playlist items to the storage capacity of your device in kilobytes (KB), megabytes (MB), or gigabytes (GB).

FIGURE 25.9

Options for restricting an Auto Playlist



Select the criteria that you want to change in the auto playlist.
The auto playlist is updated automatically each time you open it.

Auto Playlist name: Rob's Playlist

Create an auto playlist that includes the following:
  Music in my library
    Album artist Contains Rush
    [Click here to add criteria]
And also include:
  Pictures in my library
    [Click here to add criteria]
And also include:
    [Click here to add criteria]
And apply the following restrictions to the auto playlist:
    [Click here to add criteria]
      Limit Number Of Items
      Limit Total Duration To
      Limit Total Size To

Click OK when you've finished setting criteria. To see which items the Auto Playlist includes, click its name under Playlists in the Navigation pane. Or click Playlists in the Navigation pane, and then double-click the playlist name in the Details pane. To use your new playlist for auto syncing, connect your portable device to the computer. Then right-click the device in the Navigation pane and click Set Up Sync. Choose the Sync This Device Automatically check box and remove any items listed in the Playlists To Sync column. Then add your new playlist to that same column.

Limiting playlists to favorite items

When you manually create playlists by dragging items to the List pane, criteria you set in an Auto Playlist have no effect. But you can limit manual playlists to favorite items, providing you rate your items before dragging them over.

First, before you drag an album or category to the List pane, open the album or group and rate the songs. To rate a song, right-click its title in the contents pane and choose Rate. Or select several songs to which you want to apply the same rating, right-click any one selected song, and choose Rate. Give a four- or five-star rating to any songs you do want copied to playlists. Give a three-star or lower rating to songs you don't want copied.

To copy only favorites from the category to the playlist, right-click the album's icon or category name and choose "<playlist name> (Favorites Only)." Only the 4- and 5-star rated items appear in the List pane.

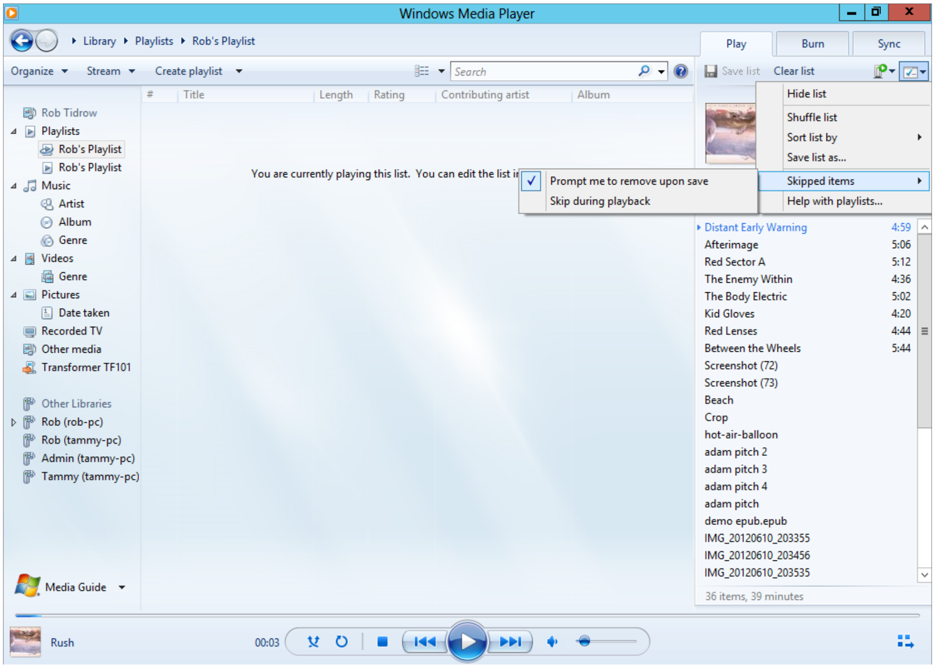
Skipping playlist items

When you're playing items in a playlist, you can skip over any item by clicking the Next button in the play controls. Media Player can remember which items you skipped and then skip them automatically the next time you play the list. It can also automatically omit skipped items when you save the playlist.

To choose how Media Player treats skipped items, click the List Options button above the list (shows an icon with a checkmark on it) and choose Skipped Items, as in Figure 25.10. A selected option is active; an unselected option is inactive. You can click the option to activate or deactivate it. The following section describes how those options work.

FIGURE 25.10

Options for skipping items


Windows Media Player
Library
Playlists
Rob's Playlist
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Save list
Clear list
#
Title
Length
Rating
Contributing artist
Album
Rob Tidrow
Playlists
Rob's Playlist
Rob's Playlist
Music
Artist
Album
Genre
Videos
Genre
Pictures
Date taken
Recorded TV
Other media
Transformer TF101
Other Libraries
Rob (rob-pc)
Rob (tammy-pc)
Admin (tammy-pc)
Tammy (tammy-pc)
Media Guide
Hide list
Shuffle list
Sort list by
Save list as...
Skipped items
Help with playlists...
Prompt me to remove upon save
Skip during playback
Rush
00:03

You are currently playing this list. You can edit the list i

Distant Early Warning	4:59
Afterimage	5:06
Red Sector A	5:12
The Enemy Within	4:36
The Body Electric	5:02
Kid Gloves	4:20
Red Lenses	4:44
Between the Wheels	5:44
Screenshot (72)	
Screenshot (73)	
Beach	
Crop	
hot-air-balloon	
adam pitch 2	
adam pitch 3	
adam pitch 4	
adam pitch	
demo epub.epub	
IMG_20120610_203355	
IMG_20120610_203456	
IMG_20120610_203535	

36 items, 39 minutes

Prompt Me to Remove Upon Save

Activating the Prompt Me To Remove Upon Save option causes a message to appear whenever you save a playlist that contains skipped items. You can choose whether you want to leave the skipped items in the saved playlist or omit them. If you choose to keep the items in the playlist, you can choose Skip During Playback to have the songs skipped over the next time you play the playlist.

If you choose the Don't Show This Message Again option, Media Player automatically saves the playlist, and skipped songs will be skipped over on playback. Clear this option if you want to be prompted about these skipped items again.

Wrap-Up

Windows 8 includes two tools to play back videos — the Video app and Windows Media Player 12. Here's a quick summary of key points made in this chapter about using the Video app and Media Player to watch videos and view photos:

- To view a video using the new Windows 8 Videos app, open File Explorer and double-click a video file or right-click the video and choose Open With ➪ Video.
- To open your Videos folder, open File Explorer and open the Videos folder.
- To view video files you've imported to Media Player, click Videos in the Navigation pane.
- For help, troubleshooting, and more information, click the Help button in the toolbar.

CHAPTER

26

Using Media Center

IN THIS CHAPTER

- Playing music with Media Center
- Enjoying slide shows and movies
- Watching and recording TV
- Personalizing Media Center

Windows Media Center is an optional program that is available to Windows 8 Pro users. It brings all your media (pictures, music, video) together in one easy-to-use center. If you connect your computer to a TV, you can use Media Center to enjoy them on a TV screen. If the graphics card that lets you connect to a TV screen came with a Windows Media Center remote control, you can control Media Center with that. No need to use a mouse and keyboard.

A second advantage of Media Center is that it allows you to watch and record live TV, but this requires special hardware in the form of a TV tuner card or PVR (Personal Video Recorder) card.

This chapter first looks at those aspects of Media Center that work with any computer. That way, if you have Media Center, you can try out the things that will work for you. Features that require special equipment are discussed later in the chapter.

Before You Begin

At the time of this writing, Microsoft has announced that Media Center will not be part of any versions of Windows 8 by default. Instead, Media Center will be available as an upgrade to Windows 8 Pro at an additional cost. At publication time, the fee for Media Center has not been announced publicly.

This chapter shows you how to install, set up, and use Media Center. Some specifics, however, may have changed in the Windows 8 production software. We do not anticipate large-scale changes to Media Center, but there may be changes to the way in which Media Center is distributed.

Installing Media Center

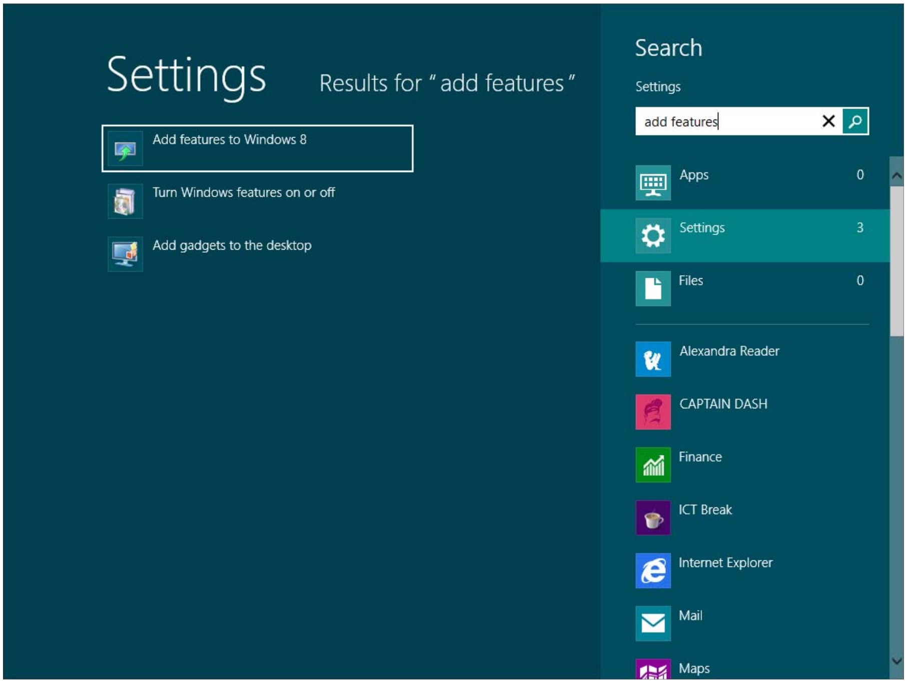
To install Media Center, you need to get a Media Center product code. These codes can be acquired online during the installation procedure. You might also have received a product key from your Windows 8 reseller or from Microsoft directly.

To begin the installation, follow these steps:

1. Save any unclosed documents and exit from all apps and programs.
2. Show the Charms Bar and choose Search.
3. Type **add features** in the search box and click Settings.
4. Click the Add Features To Windows 8 option on the Settings screen (as shown in Figure 26.1). The Add Features To Windows 8 dialog box appears (see Figure 26.2).

FIGURE 26.1

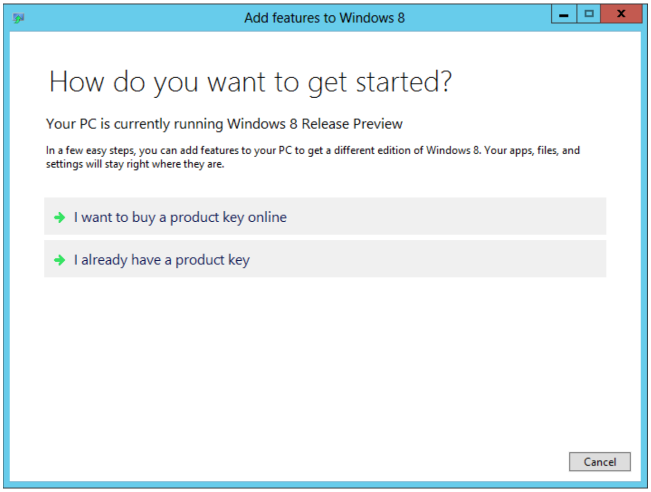
Adding features to Windows 8



Settings
Results for " add features "
Add features to Windows 8
Turn Windows features on or off
Add gadgets to the desktop
Search
Settings
add features
Apps 0
Settings 3
Files 0
Alexandra Reader
CAPTAIN DASH
Finance
ICT Break
Internet Explorer
Mail
Maps

FIGURE 26.2

You can buy a product key online or choose the option that you have a key already.



Add features to Windows 8

How do you want to get started?

Your PC is currently running Windows 8 Release Preview

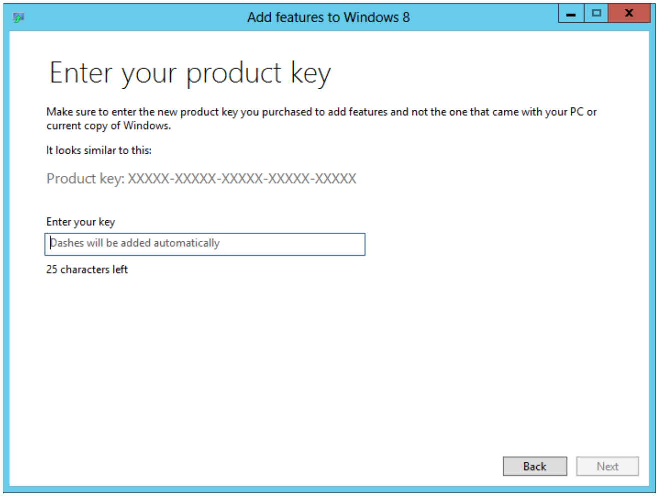
In a few easy steps, you can add features to your PC to get a different edition of Windows 8. Your apps, files, and settings will stay right where they are.

I want to buy a product key online
I already have a product key
Cancel

5. On the How Do You Want To Get Started screen, click I Want To Buy a Product Key Online if you need to purchase a Media Center Product key. Or click I Already Have A Product Key. In our example here, we chose the latter option.
6. On the Enter Your Product Key screen, in the Enter Your Key field (as shown in Figure 26.3), type the 25-character Media Center product key that you acquired. Click Next.

FIGURE 26.3

Enter your Media Center product key in this dialog box.



Add features to Windows 8

Enter your product key

Make sure to enter the new product key you purchased to add features and not the one that came with your PC or current copy of Windows.

It looks similar to this:

Product key: XXXXX-XXXXX-XXXXX-XXXXX-XXXXX

Enter your key

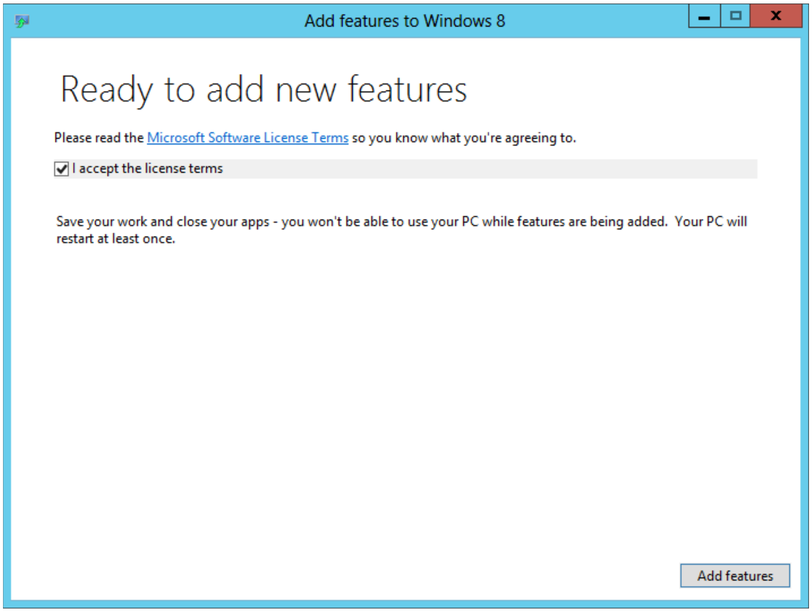
Dashes will be added automatically

25 characters left

7. On the Ready To Add New Features screen (see Figure 26.4), click I Accept The License Terms. You can read these terms by clicking the Microsoft Software License Terms link at the top of the screen.
8. Click Add Features. The Adding Features screen appears, showing you the progress of the installation. This process may take some time.
9. Your computer will need to shut down and restart at least once during the installation. If you are prompted to shut or restart your computer, click Yes to allow the Media Center installation to continue.

FIGURE 26.4

You must agree to the licensing terms to continue with the Media Center installation.



Ready to add new features

Please read the Microsoft Software License Terms so you know what you're agreeing to.

☑ I accept the license terms

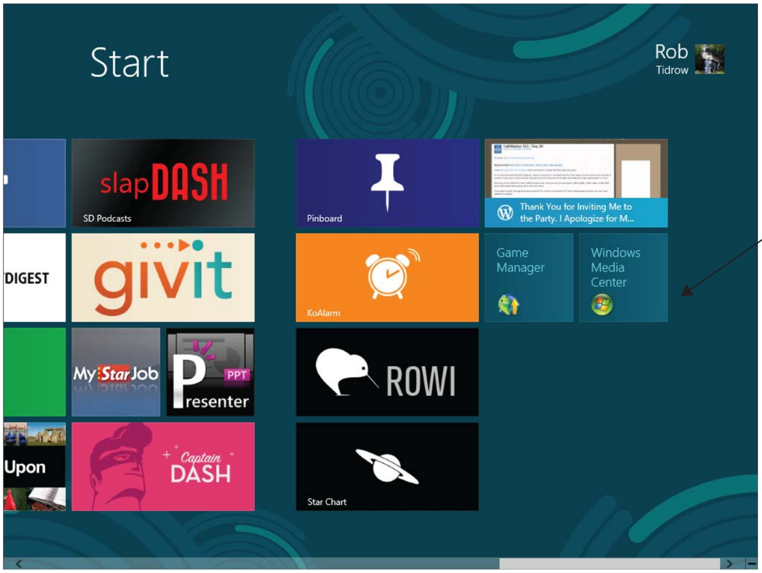
Save your work and close your apps - you won't be able to use your PC while features are being added. Your PC will restart at least once.

Wait for your computer to install Media Center. When your computer restarts, it shows the startup screen when it is ready for Windows to be launched. When the startup screen appears, click it or swipe to show your usernames. Log in using the username you used when you started the Media Center installation.

The Media Center tile shows as the last tile on the Windows 8 Start screen. Figure 26.5 shows the tile as it appears on a Start page. To finish the installation process, click the Desktop tile to show the Windows desktop. The Add Features To Windows 8 dialog box appears and tells you Thanks, You're All Done And Your PC Is Ready To Go. Click Close to exit the dialog box and see the next section to learn how to use Media Center.

FIGURE 26.5

Media Center tile on the Windows Start screen


Start
Rob
Tidrow
slapDASH
SD Podcasts
Pinboard
Thank You for Inviting Me to the Party. I Apologize for M...
DIGEST
givit
KoAlarm
Game Manager
Windows Media Center
My StarJob
Presenter
PPT
ROWI
Upon
Captain DASH
Star Chart

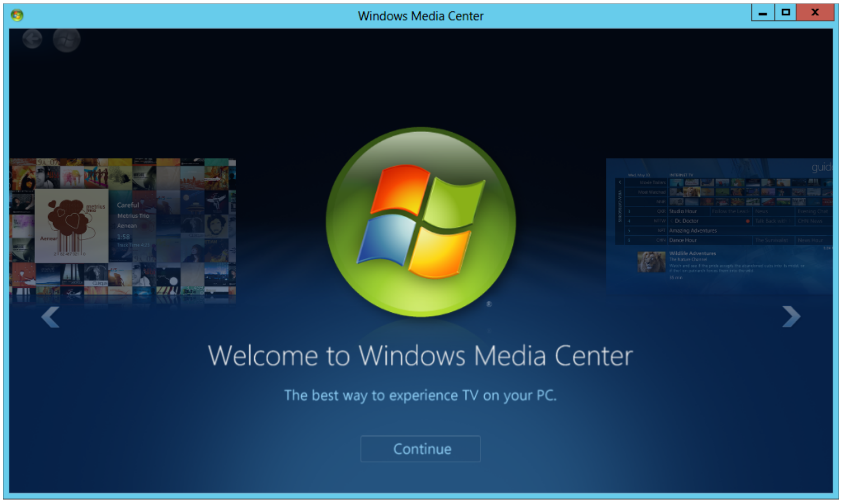
Media Center tile

Starting Media Center

Click the Windows Media Center tile on the Start screen. This launches Media Center as a desktop app, as shown in Figure 26-6.

FIGURE 26.6

Windows Media Welcome screen


Windows Media Center
Continue

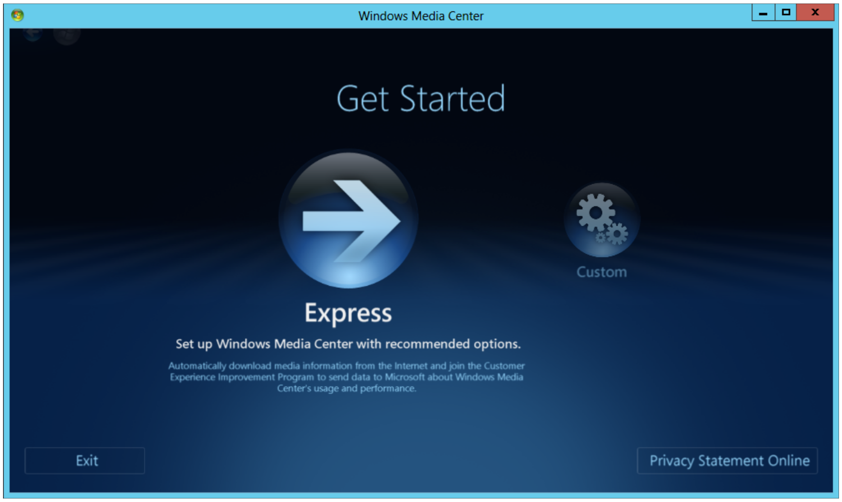
Welcome to Windows Media Center

The best way to experience TV on your PC.

Click the Continue button below the Welcome To Windows Media Center title. This launches the Get Started screen (shown in Figure 26.7). You have two setup choices: Express or Custom. For most users, the Express option is the recommended method so that you can get started using Media Center quickly. We show you how to use that setup option in this chapter.

FIGURE 26.7

Use the Express option to use Media Center recommended settings.


Windows Media Center
Get Started
Custom
Express
Exit
Privacy Statement Online

Set up Windows Media Center with recommended options.

Automatically download media information from the Internet and join the Customer Experience Improvement Program to send data to Microsoft about Windows Media Center's usage and performance.

NOTE

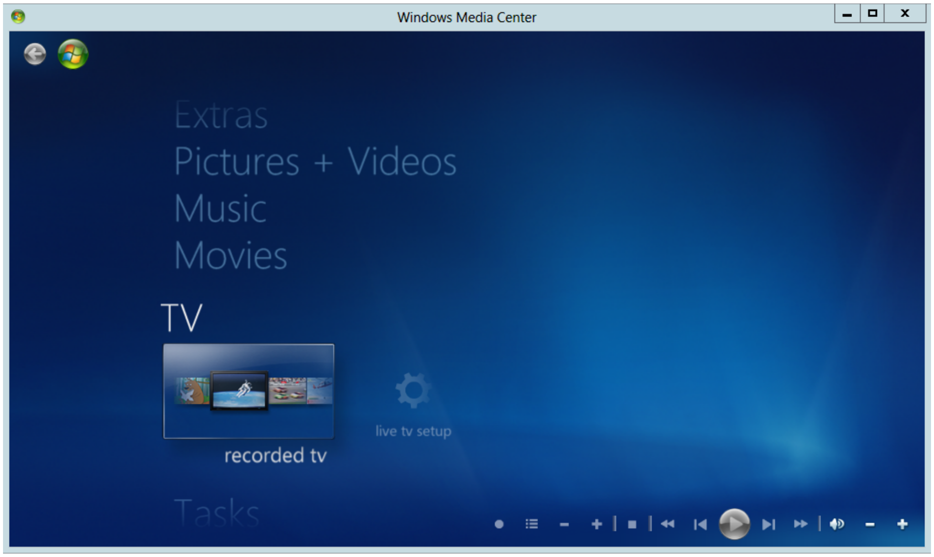
If you choose the Custom setup option, Media Center takes you through some questions and show you some examples of its use. If you're not a technical person, the trickiest part will be answering questions about your main monitor. If you don't know the answer to a question and guess wrong, your screen goes completely black. But don't panic — it comes back to life in 15 or 20 seconds. Try again (but not with the same incorrect answer).

To continue, click the Express icon (looks like a large arrow). Media Center configures itself for the recommended settings. You can modify these by using the instructions found later in the "Personalizing Media Center" section of this chapter.

After setup completes, you'll be taken to Media Center's "home page." (We put that in quotation marks because it's not an Internet home page like on the web. You don't have to be online to start and use Media Center on your PC.) Media Center shows a list of its primary features, including TV, Movies, Pictures + Videos, Extras, and Tasks. Figure 26.8 shows what that home page looks like. Items in the top-left and bottom-right corners appear only when you're using a mouse to control Media Center and only after you move the mouse. Note also that a few options might not show up in Media Center until you configure it.

FIGURE 26.8

Windows Media Center home page.



The interface on Media Center is much different from the desktop. That's because it's designed to work on a TV screen and through a remote control. Even so, you don't have to hook up to a TV to use Media Center. You can use it on your computer with your mouse and keyboard.

Working Media Center with a mouse

Working Media Center with a mouse is relatively easy, although not intuitively obvious. Point above or below the names down the center of the screen or to the left or right of a horizontal row of names to see a white arrow. Then hover the mouse cursor over items to scroll through items. If your mouse has a wheel, you can use that to scroll up and down. Click any item to select it. Click the Back button in the upper-left corner to back out of a selected area. Click the round Media Center logo near the Back button at the top left of the Media Center window to return to Media Center's home page.

As on your desktop, you can often find extra options by right-clicking the page. Often, you'll find an option to change settings that apply to a page or to burn a CD/DVD from the content you're viewing.

Working Media Center with a keyboard

On a keyboard use the ↑, ↓, ←, and → keys to move around. If you use keys on the numeric keypad, make sure that the Num Lock key is turned off. When the item you want is highlighted, press Enter to select it. Press the Backspace key to back out of a selected area. Press Escape (Esc) to return to the home page.

Using a Media Center remote control

If you're using a Media Center remote control, use the arrow keys around the OK button to get around. Press OK to select the currently highlighted option. Use the Back button to back out of any area. Press the button that shows the Media Center logo to return to Media Center's home page.

The More button on a remote works like right-clicking. Often, you'll find options to change settings, burn a CD or DVD from the current item, and more.

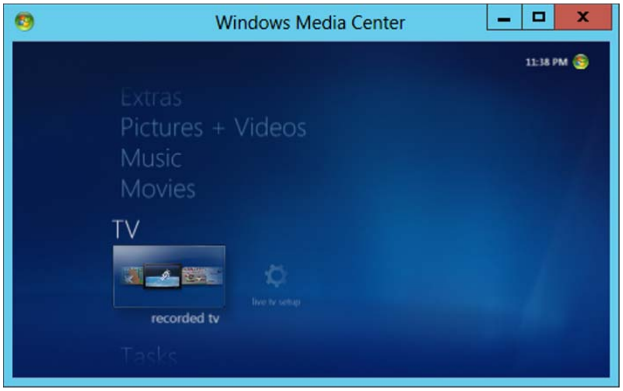
Plenty of other buttons on your remote control can be used for getting around in Media Center. Because there are different brands of remotes, we can't say exactly what's in yours. But you can usually tell what a button does just by looking at its label. Or, check the manual that came with your remote control for more information.

Moving and Sizing Media Center

Media Center usually opens full screen. But you don't need to leave it that way on a computer monitor. When you move the mouse, you'll see the standard Minimize, Restore, and Close buttons in the upper-right corner. Click the Restore button to shrink it down. Then drag any corner or edge to make it exactly the size you want. Figure 26.9 shows an example in which we have Media Center down near the lower-right corner of the screen.

FIGURE 26.9

Media Center in the lower-right corner of the desktop



If you have multiple monitors, you can also drag the Media Center window, by its title bar, over to another monitor. After it's on the other monitor, you can maximize it there to fill that screen.

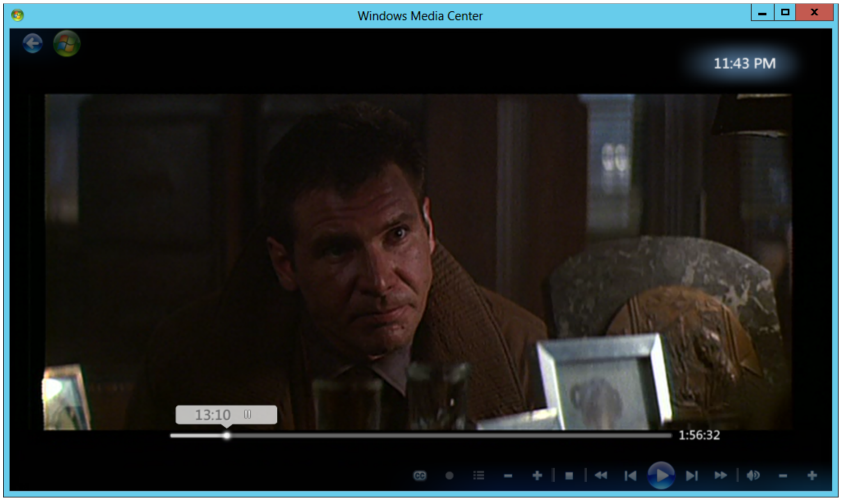
The next few sections discuss things you can do in Media Center on regular computers with regular monitors. The optional TV features are discussed later.

Media Center Playback Controls

Media Center can play picture slide shows, videos, music, movies, and TV shows. When you get something playing, you have two ways to control playback. If you're using a mouse, move the mouse a little to reveal the playback controls shown in Figure 26.10. Depending on what you're playing, some controls may be disabled (dimmed).

FIGURE 26.10

Playback controls for a mouse while viewing a DVD movie



If you're using a remote control, those buttons won't appear on the screen. Use the corresponding buttons on the remote to control playback.

Things You Can Do Without TV

You can do many things in Media Center that don't require a TV tuner card or TV. You can do these things with Media Center showing full screen or in a smaller window on the desktop.

Playing music in Media Center

The Music portion of Media Center gets albums and songs from Windows Media Player. You can also listen to online radio stations from Media Center. Choose Music from the home page. Options that appear across the horizontal row are summarized here:

- **Music Library:** Lets you choose songs from Windows Media Player categories and playlists to play. You can create a queue of songs to play and more.

NOTE

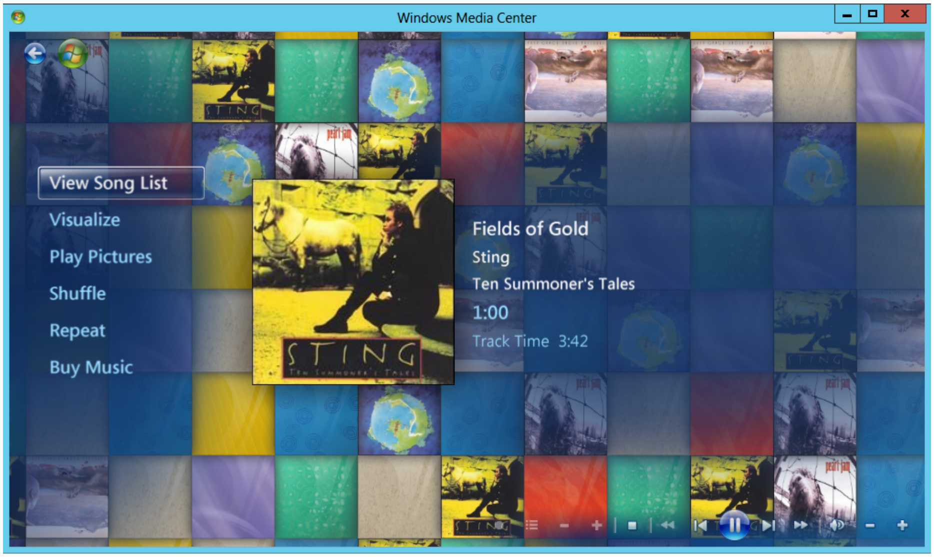
If there is no music in your media library yet, you'll be prompted to add some. You can choose to put songs in your media library. If you don't have a media library, you can learn to create one in Chapter 24, "Making Music with Media Player."

- **Play Favorites:** Plays songs in your Media Player media library based on their ratings.
- **Radio:** Lets you locate and play music from radio stations if your PC includes an FM radio tuner.
- **Search:** Helps you find songs in your media library.

While music is playing, you'll see album and song information, as well as control buttons. Figure 26.11 shows an example of a music selection playing. You can use the control buttons to view or change the queue (playlist), watch a music visualization, play a photo slide show with the music, and so forth. Use the playback controls to control volume, pause, stop, skip songs, and so forth. If you navigate away from the page shown in the figure, go to Media Center's home page and choose Now Playing to return.

FIGURE 26.11

Playing music in Media Center



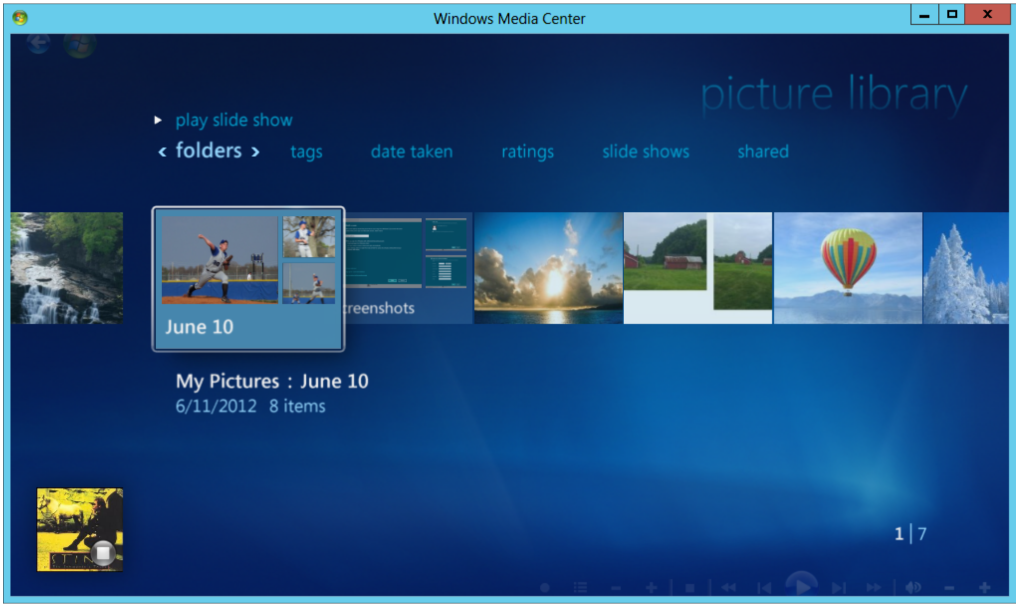
Fields of Gold
Sting
Ten Summoner's Tales
1:00
Track Time 3:42

Viewing pictures and videos in Media Center

You can use Media Center to view and play pictures and videos stored in your Pictures and Videos folders. Click Pictures + Videos on the home page (see Figure 26.12) to see pictures and videos from your Pictures Library. Click Picture Library to view your still pictures, or Video Library to view your video library. Use Play Favorites to play picture slide shows and videos.

FIGURE 26.12

Pictures and videos in Media Center


Windows Media Center
picture library
play slide show
folders
tags
date taken
ratings
slide shows
shared
June 10
reenshots
My Pictures : June 10
6/11/2012 8 items
1 | 7

Movies and TV in Media Center

The Movies category on the home page lets you view movies on your PC. Figure 26.10 earlier in this chapter shows an example of watching a DVD movie with Media Center. You can also use the Movie category to rent movies online and watch movies you've purchased. The TV category on the home page lets you view live TV (if your PC has a TV tuner) and also view recorded TV programs. Use the Guide item under each of the categories to browse online TV programs and movies. As always, your best bet is to simply explore your options.

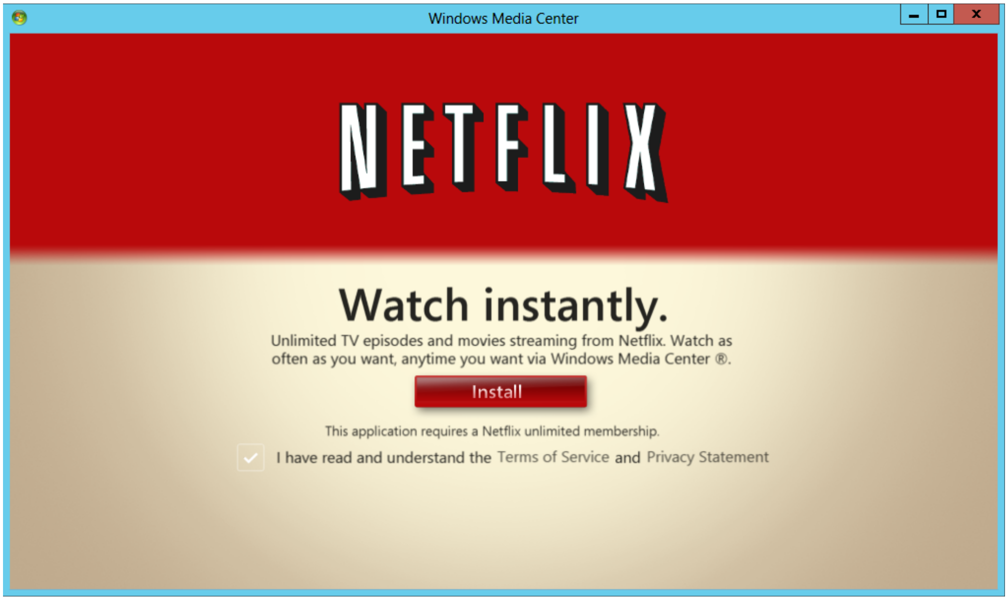
TIP

When a movie is playing, use the playback controls as you would on a VCR to pause, resume, fast forward, rewind, and so forth.

Windows 8's Media Center enables you to watch Netflix streaming movies. To use this feature, you must have a Netflix unlimited membership and an Internet connection capable of streaming Netflix videos. To set up Netflix on Media Center, click Movies and then click the Netflix icon. When the Netflix window appears (see Figure 26.13), click the I Have Read And Understand The Terms of Service And Privacy Statement option. Then click Install.

FIGURE 26.13

Netflix streaming is available with Media Player.



Watch instantly.

Unlimited TV episodes and movies streaming from Netflix. Watch as often as you want, anytime you want via Windows Media Center ®.

This application requires a Netflix unlimited membership.

☑ I have read and understand the Terms of Service and Privacy Statement

Windows downloads the Netflix program and installs it in Windows Media Center. After installation, the Member Sign In window appears. Enter your membership e-mail address and password. Click Continue. After a few moments, the Netflix window appears showing a list of movies available to you. Use this window to access your Netflix queues, read descriptions of movies, select new items for future viewing, and to select movies to view instantly. For more information on using Netflix, refer to its online help.

Extras

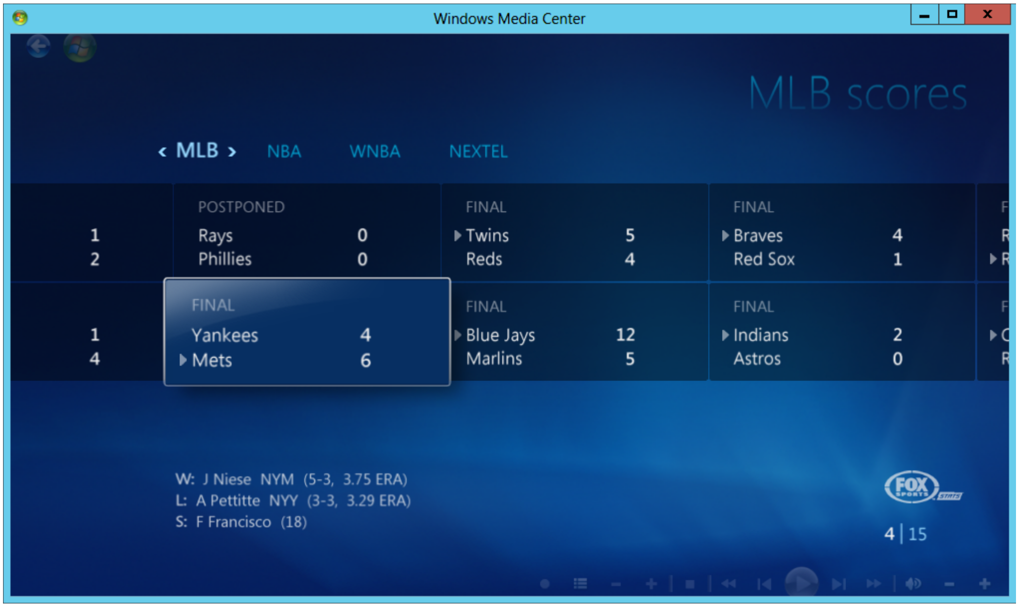
Click the Home button to return to the Media Center home page. Click Extras to see the Extras Library. The Extras option in the home page gives you access to the Extras Library, which contains games, XM Radio Online, HSN Vision, and other applications trusted by Media Center that you can access within Media Center.

Sports

The Sports option lets you browse information about scores and statistics, players, and fantasy sports leagues. When tracking a specific player, you can view sport-specific statistics such as (for baseball) at bats, runs, hits, and so on. You need an online connection to the Internet for this feature. Figure 26.14 shows an example of Major League Baseball scores presented by Fox Sports.

FIGURE 26.14

Media Player's Sports tool lets you see updated sports scores and other sports information.



1
2

POSTPONED
Rays 0
Phillies 0

FINAL
Twins 5
Reds 4

FINAL
Braves 4
Red Sox 1

1
4

FINAL
Yankees 4
Mets 6

FINAL
Blue Jays 12
Marlins 5

FINAL
Indians 2
Astros 0

W: J Niese NYM (5-3, 3.75 ERA)
L: A Pettitte NYY (3-3, 3.29 ERA)
S: F Francisco (18)

4 | 15

Watching and Recording TV

If your computer has a TV tuner or Personal Video Recorder card, you can use Media Center to watch and record TV. If your computer doesn't already have one, you can purchase and install one or have one professionally installed. Ideally, you want a card that's specifically designed to work with Media Center. One that comes with a Media Center remote control is ideal if you think there's a chance you might want to connect your computer to a TV.

TIP

TV tuner devices for PCs come in two formats: as a card that installs in the computer or as a USB device. The USB format offers portability, enabling you to use the device on more than one computer. Portability isn't the only consideration, however, so choose a TV tuner that suits all your needs.

The TV tuner device you purchase will provide a connection for cable TV or an antenna. You'll need to connect that to get TV reception. You don't need to connect to a TV screen, however. You can watch and record TV from any standard computer monitor.

Note

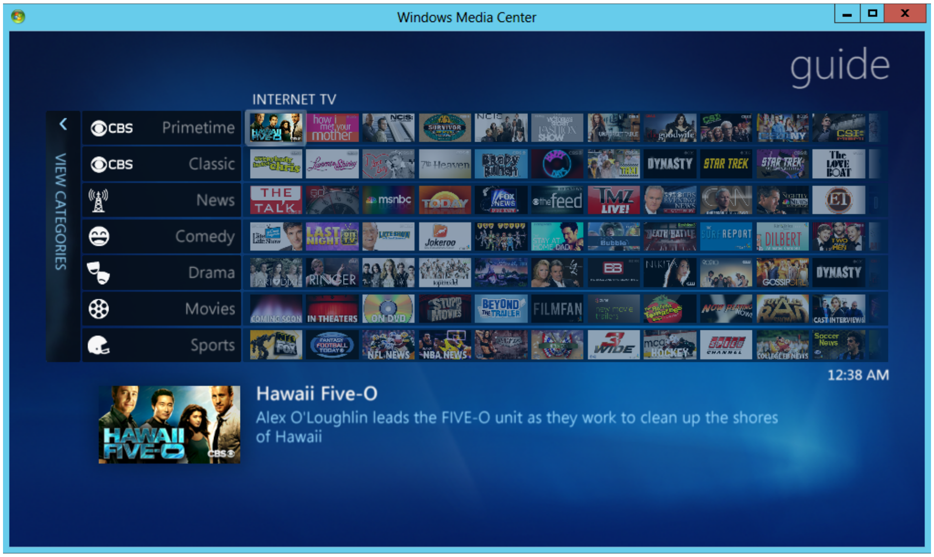
The TV tuner device might also include other ports such as S-Video input or FM input.

To use the TV features, choose TV on Media Center's home page. You'll see five options: Internet TV, Guide, Search, Recorded TV, and Live TV Setup. Before you start using Media Center for watching TV, you need to run through setup. Click Live TV Setup and follow the prompts to specify input type, scan for channels, and complete other setup and configuration tasks. If you see an item named Live TV rather than Live TV Setup, the configuration wizard has already been run. You can run it again if necessary from the Tasks option on the home page.

The Guide option takes you to your online program guide of upcoming TV shows, as shown in Figure 26.15.

FIGURE 26.15

Media Center TV Guide



Hawaii Five-O

Alex O'Loughlin leads the FIVE-O unit as they work to clean up the shores of Hawaii

If you're using a remote control, you can scroll through times and channels using the navigation buttons. To watch or record a show that's currently airing, highlight its title and click OK. If you're using a mouse, move the mouse pointer onto the guide. Some arrows display just below the guide. Click those to scroll through times and channels. To watch or record a show that's currently airing, click its title.

TIP

Click View Categories at the left side of the guide to see shows organized into categories such as Most View, Movies, Sports, Kids, and so forth.

When a TV show is playing, you can use the playback controls for just about anything except fast forwarding "into the future." For example, you can pause playback and then resume later. Or you can rewind.

You don't want to pause live TV for too long, however. Pausing for a few minutes is fine. Pausing for hours won't work because there's a limit to how much live TV your hard drive can store during a pause. The exact limit depends on the storage capacity and free space on the drive. But it's always a matter of minutes, not hours.

Internet TV

With Windows 8 Media Center, you have access to Internet TV. This is a free online service that provide access to television shows on the Internet. To begin using it, click Internet TV in the TV category. Next, click the option for agreeing to the licensing terms and click Install. Media Center downloads and installs the Internet TV software.

Once installed, the Internet TV screen shows a list of programs from which to choose. In Figure 26.16, for example, the Smithsonian Channel's Mighty Ships program is playing.

FIGURE 26.16

Media Center's Internet TV feature

Windows Media Center
Smithsonian
CHANNEL

NOTE

Internet TV requires Adobe Flash to be installed on your computer. If it is not already installed, you will be prompted to install it the first time you view an Internet TV program. Simply follow the instructions onscreen to allow Media Center to install the Flash software.

Recording TV

You can record TV in two ways. One is to just hit the Record button in the playback controls while you're watching the show. Then Media Center will record from that point to the end of the show.

As an alternative to manual recording, choose shows to record on a regular basis. The easiest method is to open the guide and navigate to the show you want to record. Double-click it (with the mouse) or press OK on the remote control.

Click the Record button if you want to record only the selected show when it airs. Click Record Series to record all future airings.

To stop a recording in progress, right-click the red Record button in the play control of the Windows Notification area and choose Stop Current Recording. Or press the Stop button on your remote control.

It's important to keep in mind that recorded TV shows take up a lot of disk space. The higher the quality of settings chosen, the more disk space a recorded TV show requires. The numbers range from 5.6GB per hour for 1080i high-definition down to about 1GB per hour for fair resolution.

TIP

A very large hard disk can hold quite a bit of recorded TV. For example, a 2TB hard disk can hold about 360 hours of 1080i high-definition TV.

To decide on a quality, you need to think in terms of available disk space and how long you intend to keep each show on the disk. Open your Computer folder to see available disk space on your hard drive. If the available space on a drive doesn't show in a meter, choose the Details view or right-click the drive's icon and choose Properties.

TIP

See Chapter 27, "Understanding Drives, Folders, and Files," for information on drives, your Computer folder, and storage capacities.

Watching recorded TV

To watch a recorded TV show, starting from Media Center's home page, choose TV, and then Recorded TV. Scroll through the shows and choose any one by clicking or by pressing OK on the remote control.

The buttons are self-explanatory. They let you play or delete the show. Set a time limit on how long you'll keep it on your hard drive. You can also choose to record the series or view other times.

Recorded TV files

Each recorded TV show is stored as a file with a `.wtv` filename extension. Unless you choose another location, they'll likely be placed in the Recorded TV subfolder in your Public folder. You can use the Folders list to navigate to that folder.

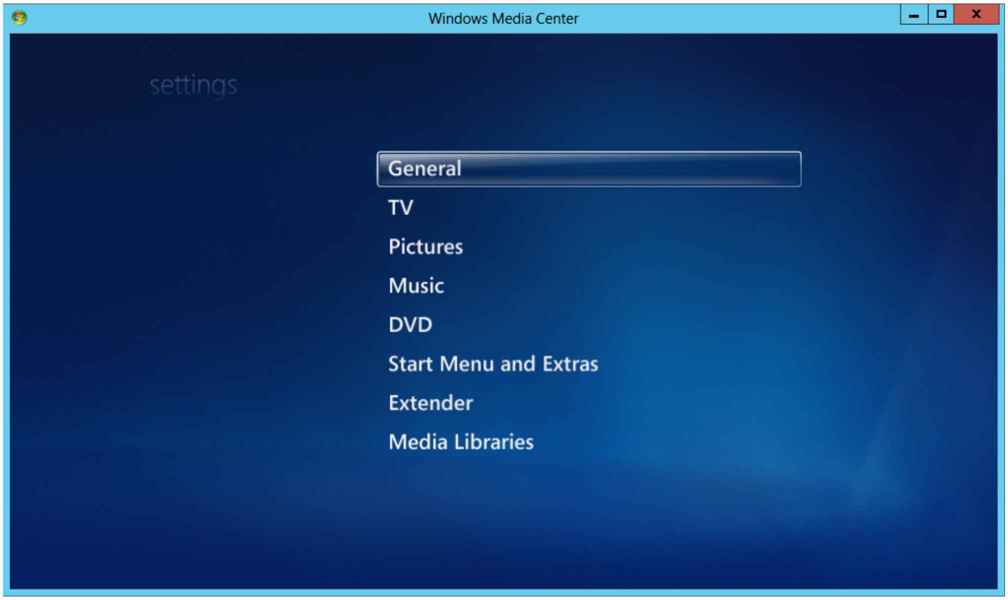
As with any file, you can right-click an icon to see different things you can do with it. For example, you can play a TV show in Windows Media Player rather than Media Center. You can also convert the file to `DVR.MS` format for compatibility with earlier versions of Windows Media Center.

Personalizing Media Center

Like most programs, Media Center has options that you can adjust to your own needs and preferences. To get to those settings, select Tasks on Media Center's home page and click Settings. A screen appears offering buttons for changing General, TV, Pictures, Music, DVD, Start Menu and Extras, Extender, and Media Libraries, as shown in Figure 26.17. We cover each in the sections that follow.

FIGURE 26.17

Media Center Settings page



General settings

Clicking General takes you to still more options for personalizing Media Center. Under Startup and Window Behavior, you'll find the following.

Startup and Window Behavior

The Startup And Window Behavior button takes you to general options for controlling how Media Center behaves, as follows:

- **Show A Warning Before Displaying Web Pages That Are Not Designed for Windows Media Center:** Some of the online services and other web content you can get to in Media Center can't be operated through a remote control or the normal Media Center interface. Choosing this option ensures that you see a warning when you encounter such content, so you can cancel out if you want. That way, you won't get stuck on some page that you can't operate with a remote control.
- **Show Taskbar Notifications:** Choose this option to ensure that you see Notification area messages telling you when Media Center is up to something, such as recording a scheduled TV show.

Visual and Sound Effects

The Visual and Sound Effects options let you enable, or disable, the transition animations between pictures in a slide show. Here you can also enable or disable the audio feedback you hear when navigating in Media Center, choose a color scheme for your Media Center display, and choose a background color for videos that don't fill the entire screen.

Windows Media Center Setup

The Media Center Setup options allow you to set up your Internet connection, TV signal (if you have a TV tuner), speakers, and TV/monitor. If you want to run through the initial setup process again, click Run Setup Again. That takes you through the entire process, step by step.

Parental Controls

Media Center setup has parental controls that are separate from those in Windows 8. Think up a four-digit access code that you won't forget. (If you forget the code, you'll lock yourself out of blocked content.) Then click Parental Controls and enter that code as instructed onscreen.

After you've entered the code (twice), you're taken to a page where you can activate TV blocking and DVD blocking, change your access code, or turn off parental controls.

Automatic Download options

The Automatic Download options allow you to enable or disable automatic downloading of media information and program guide data. If you disable downloading of media information, you'll see "Unknown" in place of many artist and album names, "Track" instead of song titles, and other generic information. Turn automatic downloading back on to replace the unknown and generic information with actual names and titles.

If you disable automatic program guide downloads, you'll need to update the program guide manually from time to time. To do that, go into the program guide, right-click a channel in the left column, and choose Get Latest Guide. If you're using a remote control, go into the guide, highlight a channel number, press the More button on the remote control, and choose Get Latest Guide.

Optimization

The Optimization option takes you to a page where you can schedule optimization tasks to run on a regular schedule. Be sure to choose a time when the computer will be on but you won't be needing Media Center, because you won't be able to use Media Center for the few minutes it takes to complete those tasks.

About Windows Media Center

This option shows basic information about the Media Center software. You can find out the software version, terms of service information, and information about data partners. No user-definable information or options are available on these screens.

Privacy

Choose this option to view Microsoft's privacy policy statement, configure whether Media Center sends any usage data to Microsoft, and turn off the Most Viewed filter in the Guide.

TV settings

The TV settings page includes the following options:

- **Set Up TV Signal:** Clicking this button takes you through a step-by-step wizard for configuring your incoming TV signal.
- **Configure Your TV or Monitor:** This is the same setting as the one under the General options. Use it to get the best picture quality on your TV or monitor.
- **Language:** Choose the preferred audio and caption languages.
- **Audio:** Choose Stereo, SAP, or any other audio option provided by your hardware.
- **Closed Captioning:** Turn closed captioning on or off and choose settings for text size, color, and related captioning properties.

Pictures settings

Clicking Pictures on the Settings tab shows you the options you can set for photos and slide shows. Again, we think they're self-explanatory. You can show pictures in random order (or not), show picture information, show song information, and determine how long to show pictures on a slide show. You also can modify the slide show background color.

When you launch a slide show from the Music area to play along with the music, the song title usually appears briefly at the start of each song and then again at the end. You can choose to have the song title shown the whole time that the song is playing, or not at all.

The Use Pan-And-Zoom option causes each picture in the slide show to pan and zoom into view.

The Favorite Pictures options enable you to specify if you want only pictures rated with four or five stars to displays, all pictures, or pictures from a specific folder.

Music settings

The Music button provides options for controlling music playback in Media Center. You can specify which songs are included in your favorites, enable shortcut keys for adding ratings, and set options for the Now Playing window that determine when song information is displayed and the window's background. You can also specify which visualizations Media Center uses when playing music.

DVD settings

The DVD option lets you choose a default language for multi-language DVDs. Use the Audio option to set an audio mode for the Dolby decoder. You can also control closed captions for DVDs from the page. Use the Subtitle option to specify when subtitles are displayed. If you use a remote control to work Media Center, you can configure DVD navigation buttons according to your own preferences.

Start menu and extras

Use these options to control which items appear on the Media Center home page and in the Extras page. You can also set a handful of options for the Extras Library that control user experience and whether Media Center displays Internet security warnings.

Extender settings

Media Center extenders are devices and programs that extend Media Center's capabilities. For example, Microsoft Xbox 360 acts as an extender to share your Media Center library with other players in the house. You need to purchase an extender first. Then follow the instructions that came with that extender to hook it into Media Center on your PC.

Media Libraries

Click Media Libraries to add folders to, or remove folders from, Media Center's watch list. Pictures, music, videos, recorded TV, and movies from all the folders you specify are added to Media Center automatically, so you can play them whenever you want.

The Tasks item on the home page provides more than just the Setting option. You'll find options for burning optical discs (CDs and DVDs), syncing with other devices, shutting down or restarting the computer, and adding extenders.

Syncing, shutting down, and extenders

The Sync option in Tasks makes it easy to sync a compatible device with your Media Center content. Exactly how it works depends on the specific device you're using. If you can't get it to work by guessing, check the manual that came with the device for instructions on syncing with Windows 8 Media Center.

The Shut Down option in Tasks offers a way of closing Media Center from a mouse or remote control. You'll also have options to Log Off, Shut Down the computer, Restart the computer, or put the computer into Sleep Mode.

Wrap-Up

Windows Media Center is a great tool for enjoying all forms of digital media. To keep up with what's happening, be sure to check out the Media Center website. The site is located at `http://windows.microsoft.com/en-US/windows/products/windows-media-center/`.

This chapter has given you an overview of Windows 8's Media Center. Here's a summary of the basics:

- Windows Media Center is an add-on feature available for an extra cost and works only with Windows 8 Pro.
- You can use Media Center to enjoy all forms of digital media including photos, music, radio, video, movies, games, and TV.
- To start Windows Media Center, click the Windows Media Center tile on the Start page.
- Media Center gets photos from your Pictures folder and music from your Windows Media Player media library.
- If you have an appropriate graphics card, you can display Media Center on a TV screen and operate it with a remote control.
- If your computer has a TV tuner or PVR (Personal Video Recorder) card, you can watch and record live TV in Media Center.
- Choosing Tasks and then Settings in Media Center takes you to many options for configuring and personalizing Media Center to your liking.
- Choosing Tasks in Media Center takes you to options for syncing with compatible devices, adding extender devices, and shutting down your computer.

Part VI

Managing Your Content

IN THIS PART

Chapter 27
Understanding Drives, Folders, and Files

Chapter 28
Managing Files and Folders

Chapter 29
Searching for Files and Messages on Your Computer

Chapter 30
Metadata and Power Searches

Chapter 31
Protecting Your Files

CHAPTER
27

Understanding Drives, Folders, and Files

IN THIS CHAPTER

Disk drives, disks, and memory cards

Navigating through folders with File Explorer

Clicking, viewing, and arranging icons your way

Stop losing saved files

Beginners and casual users are often thrown by terms like *drive*, *folder*, *file*, *icon*, *kilobyte*, *megabyte*, *gigabyte*, *terabyte*, and so forth. Virtually every resource you turn to assumes that you already know what these things mean. Nobody ever bothers to explain them. That's because these terms and concepts have remained unchanged for the past 25 years or so.

Of course, just because those terms have been around for a long time doesn't mean everyone understands them. In fact, for every person who knows what those terms mean, you can be sure many thousands don't. So in this chapter, we're going to break from tradition and explain those terms.

Understanding Disks and Drives

Computers work with information. That information has to be stored on some type of *medium*. These days, that medium is most likely to be in the form of a disk or a card. You can also store information on tape, but tape is used primarily for backup.

Your computer's hard disk

All the programs and information that are in your computer are actually stored on a disk. In most cases, you will never see that disk because it's inside a sealed case. That disk goes by many names including *hard disk*, *hard drive*, and *fixed disk*. You may even hear it referred to as a *solid-state drive.*

Essentially, all of the data you work with, with the exception of information you browse to on the Internet, is stored on one or more hard disks in your computer. This includes Windows itself, your programs, and all of your documents, photos, videos, music, and other data.

NOTE

Don't confuse your hard disk with *memory* (also called RAM for *random access memory*). Your hard disk stores everything that's in your computer. Memory stores data temporarily while you are using it.

You can also add extra hard drives to your system, either internally or externally. Each shows up as an icon in your Computer folder, as discussed later in this chapter.

Your main hard disk, drive C, is called *a non-removable* disk because you can't just pop it out of the computer by pressing some button. Other types of disks are called *removable* media because you can pop them in and out of the computer quite easily. Flash drives, CDs, and DVDs are examples of removable media.

Hard drives come in two primary types for the PC. The standard hard drive comprises multiple platters of disks that rotate around a spindle. Data is written and read on the platters by way of a magnetic head. These types of drives are available in large sizes and are relatively cheap when compared to the second type of drives, *solid state drives*. Solid state drives use integrated circuits to create memory to store data. You can find solid state drives on many of the newer slim and lightweight laptops and netbooks. Solid state drives are not as vulnerable to mechanical or physical errors (such as physical damage to the drive) but are more expensive than standard hard drives. Solid state drives also provide greater speeds than traditional hard drives, providing users with improved access speeds to data, files, and other disk-related functions.

Removable media

Removable media are disks and devices you can pop into and out of the computer at will. Most removable media require a specific disk drive, or *drive* for short. The drive is a device into which you can place the disk. The drive then spins the disk. A drive head can then read data from, or write data to, the disk as it is spinning. The sections to follow are about removable media.

CDs and DVDs

CDs and DVDs are very popular storage media. The record companies use CDs to sell albums. The movie industry sells movies on DVDs. The computer industry uses both CDs and DVDs to distribute software. Figure 27.1 shows a DVD, but it could just as easily be a CD. The two look exactly alike.

FIGURE 27.1

CD or DVD

When putting a CD or DVD disk into its drive, push the eject button to open the drive or to eject the disk from the system. You will want to make sure to insert the disk in the tray or disk slot with the label facing up. For systems with disk trays, you then need to push the eject button on the drive to close the drive.

To listen to music on a CD, you usually just stick the CD into your CD drive, wait a few seconds, and the CD starts playing in your default music program, usually Windows Media Player. The same is true for most movie DVDs, but only if your computer has the appropriate hardware and software. The following is a quick rundown of where to look for more information on CDs and DVDs (besides this chapter):

- **To listen to, copy from, or create your own music CDs:** Chapter 24, "Making Music with Media Player"
- **To watch DVD movies:** Chapter 25, "Working with Video and Photos"

The most common mistake people make with CDs and DVDs is assuming they're the same. After all, they *look* the same. But they're not the same at all. Nor do you treat them like other kinds of disks. That's why we've dedicated an entire chapter (Chapter 25) just to CDs and DVDs.

Portable devices

Technically, portable devices aren't disks or disk drives. But some can store files. For example, digital cameras store pictures. Portable MP3 players store songs. When you connect such a device to your computer, Windows 8 provides access to the device as if it's a disk drive. The contents of the device, such as photos or videos, show up in your Computer folder.

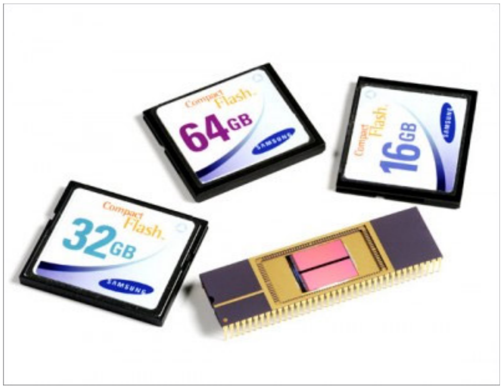
You can copy things to and from portable devices using many different techniques. For example, you can use Windows Photo Gallery (see Chapter 23) to get pictures from a digital camera. Windows Photo Gallery is included with the Live Essentials programs, both of which are available for free from Microsoft. Use Windows Media Player to copy songs to and from a portable MP3 player. You can also use more general techniques described in Chapter 28 to copy files to and from some portable devices.

Flash cards and memory sticks

Flash cards (also called *memory cards* and *memory sticks*) are a solid state medium, which just means there's no spinning disk or drive head involved in getting information to and from the card. Memory cards come in many shapes and sizes. Figure 27.2 shows some examples.

FIGURE 27.2

Memory cards



Most digital cameras and portable MP3 players use memory cards to store songs and pictures. When you connect the device to the computer, you get access to that memory card so you can copy files from it, or to it.

If your computer has memory card slots, you also have the option of putting the card right into a slot. Each slot into which you can insert a card shows up as an icon in your Computer folder. When you insert a card into a slot, you can copy files from it (or to it) using techniques described in Chapter 28.

Flash drives

A flash drive (or *thumb drive*) isn't a disk at all. It's more like a little gizmo you hang from a keychain, although you can also hide them in pens and pocket knives. Furthermore, you don't need any special kind of drive for this storage medium because it *is* a drive. You just plug it into a USB port on your computer. Figure 27.3 shows examples of flash drives.

FIGURE 27.3

Flash drives

TIP

A flash drive is basically a memory card with a USB plug connected to it.

Once the flash drive is plugged in, it looks and acts just like a disk drive to Windows. You can move or copy files to it and from it using any technique described in Chapter 28. Flash drives come in all shapes and sizes. To see examples, go to any online retailer that sells computer accessories (`www.newegg.com`, `www.cdw.com`, `www.amazon.com`, or wherever) and search for **thumb drive** or **flash drive**.

Viewing your computer's drives

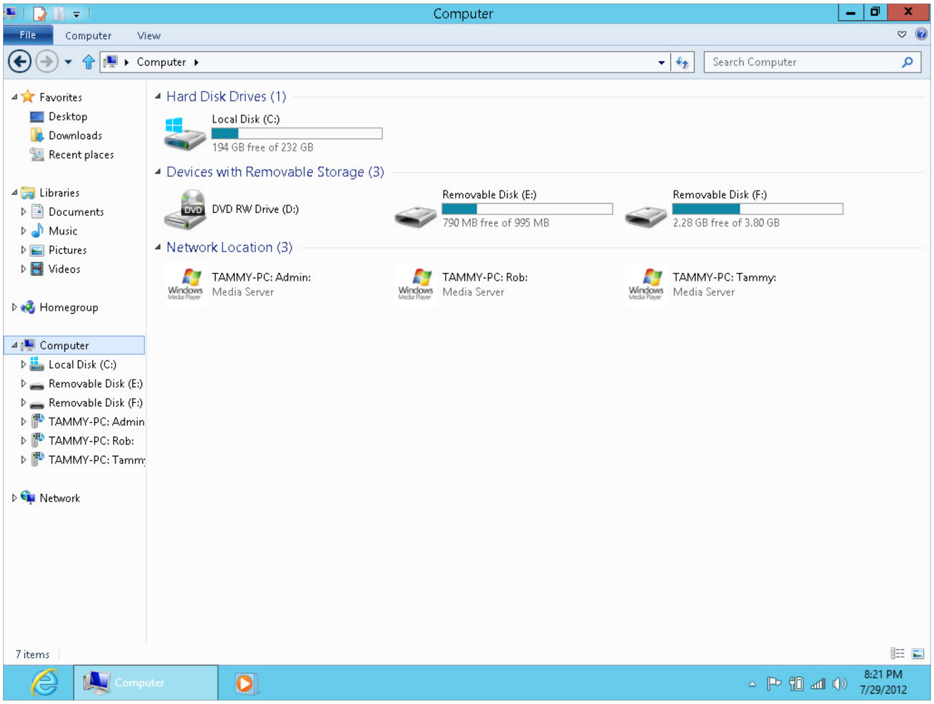
Every disk drive in your computer is represented by an icon in your Computer folder. To open that folder, use whichever of the following techniques works for you:

- Click the Desktop icon on the Windows 8 interface and click the File Explorer button. On the left pane choose Computer.
- Click the File Explorer icon on the Windows 8 interface and click Computer on the left pane of File Explorer.
- Show the Charms Bar and choose Search. Type **computer** and choose the Computer option that displays.
- From the Windows desktop, click File Explorer and choose Computer from the left pane of File Explorer.
- Press Windows+X, click File Explorer, and choose Computer from the left pane of File Explorer.

Exactly what you see depends on what's available in your PC. Figure 27.4 shows an example of a PC with lots of different drives.

FIGURE 27.4

Sample computer folder


Computer
File
Computer
View
Computer
Search Computer
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Removable Disk (E:)
Removable Disk (F:)
TAMMY-PC: Admin
TAMMY-PC: Rob:
TAMMY-PC: Tamm
Network
Hard Disk Drives (1)
Local Disk (C:)
194 GB free of 232 GB
Devices with Removable Storage (3)
DVD RW Drive (D:)
Removable Disk (E:)
790 MB free of 995 MB
Removable Disk (F:)
2.28 GB free of 3.80 GB
Network Location (3)
TAMMY-PC: Admin:
Media Server
TAMMY-PC: Rob:
Media Server
TAMMY-PC: Tammy:
Media Server
7 items
Computer
8:21 PM
7/29/2012

Don't expect your Computer folder to look like the one in Figure 27.4. All computers are different and have different drives, slots, and portable devices that can connect. But you should see at least two categories of drives.

NOTE

Your Computer folder is unique in that it contains an icon for each disk drive in your computer, as well as for devices that can store files. Most other folders contain subfolders and files.

The first category is Hard Disk Drives. Your computer will have at least one of these named C. That's the drive where everything in your computer is stored. One hard drive is sufficient for most users.

Under Devices With Removable Storage, you'll see icons for other media. For computers that older than 5 years old, you may have a floppy disk drive (A:). You probably have a CD or DVD drive. Its letter could be D: or something else. In the figure, the DVD drive is D:. The computer in that picture also has a removable disk connected to it (E:).

Another category you might see, Portable Devices, shows icons only for devices that are currently connected to your computer. If you don't have a camera or similar device connected when you open your Computer folder, you might not see a Portable Devices category. In the figure, a digital camera is connected to the computer and turned on, so it shows up under Portable Devices.

Finally, your Computer folder might also list other computers in your homegroup or local area network. This category is called Network Location. These devices are computers and shared drives that appear on networked computers.

You can leave your Computer folder open as you insert and remove disks. The names of icons that represent removable drives change to reflect the content of the disk that's currently in the drive. When you remove the disk, the name reverts to the generic name for the drive. That's a good thing to know if you're new to all of this and don't know what the icons in your own computer represent on your system.

Sizes and capacities

Every disk is like a container in which you store things. There's a limit to how much data you can put on a disk. This is no different from any other container. For example, you can store water in a drinking glass, bucket, bathtub, or swimming pool. They're all containers for water. They just vary greatly in their *capacity* (how much water each can hold).

If you liken different computer media to water containers, floppy disks, or Zip disks are like a drinking glass. A CD is like a bucket, a DVD like a bathtub, your hard disk like a swimming pool. Memory cards and flash drives vary in capacity, so it's tough to liken any one to a water container. But they're basically in the bucket-to-bathtub range.

With water, you measure things in ounces, liters, gallons, and such. In the computer world, the basic unit of measure is the *byte*. One byte equals roughly the amount of space required to store one character, like the letter *a*. For example, the word "cat" requires 3 bytes.

NOTE

The smallest unit of measure is the *bit* (binary digit), which can contain either 0 or 1. A byte is 8 bits.

Most disks can hold thousands, millions, billions, even trillions of bytes. Most often the capacities are rounded to the nearest thousand, million, or billion bytes. That's because disk storage is cheap and plentiful and there's no point in fussing over a few thousand bytes here or there. Also, computer folks don't even use the words "thousand," "million," or "billion." They have shorter terms as follows:

- **Kilo:** Thousand
- **Mega:** Million
- **Giga:** Billion
- **Tera:** Trillion

That's all you really need to know about those terms. For those who like their numbers more exact, Table 28-1 shows the facts in detail.

TABLE 28-1: Buzzwords for Disk Capacities and File Sizes

Word	Abbreviation	Approximate Size (number of bytes)	Approximate (word)	Actual Bytes
Kilo	K or KB	1,000	Thousand	2^{10} or 1,024
Mega	M or MB	1,000,000	Million	2^{20} or 1,048,576
Giga	G or GB	1,000,000,000	Billion	2^{30} or 1,073,741,824
Tera	T or TB	1,000,000,000,000	Trillion	2^{40} or 1,099,511,627,776
Peta	P or PB	1,000,000,000,000,000	Quadrillion	2^{50} or 1,125,899,906,842,624
Exa	E or EB	1,000,000,000,000,000,0000	Quintillion	2^{60} or 1,152,921,504,606,846,976

Let's return to our analogy of water containers. Here are approximate capacities of common disk types:

- **Floppy:** 1.44 MB
- **CD:** 650–700 MB
- **DVD:** 4.7 GB
- **Flash Drive:** 4+ GB
- **Hard disk:** 230+ GB

Note that hard disks are available in many different capacities from about 230GB to 2TB or more. (Some computer systems still come with smaller hard drives, as little as 120GB.) Zip disks, memory cards, flash drives, and portable devices also vary greatly in capacity. The hard disk reigns supreme in its ability to store large amounts of information.

How much room is there?

Everything you store on a disk takes up some space. So once you start putting things on a disk, you have some used space and some free space. It's easy to see how much space you have on a disk.

When you open your Computer folder, each hard disk has a little meter beside it (in Tile view) that shows how much space is used (blue) and how much free space is still available for storing data (white). For example, in Figure 27.4, Removable Disk E has 790MB of free space left. Its total capacity is 995MB (or about 1GB). Disk F, on the other hand, has 2.28GB free of a total of 3.80GB.

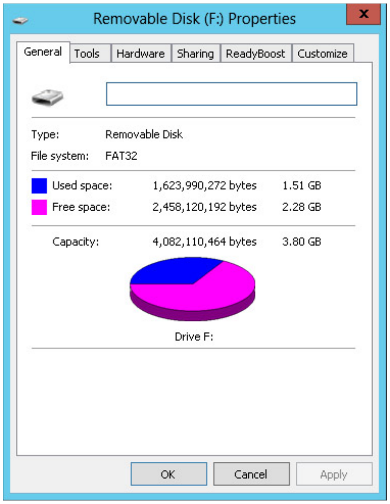
TIP

If your Computer folder doesn't show the disk-size meters, click Views in its toolbar and choose Tiles. If yours aren't grouped, choose Group By and select the Type column heading.

To see how much space is left on a flash drive, memory card, or other device, first insert the disk or card. Right-click the icon for that drive and choose Properties. You see a dialog box like the example shown in Figure 27.5. There you can see how much space is used, how much is still available, and the total capacity of the disk or card.

FIGURE 27.5

Used space, free space, and capacity



Type: Removable Disk
File system: FAT32

🟦 Used space:	1,623,990,272 bytes	1.51 GB
🟪 Free space:	2,458,120,192 bytes	2.28 GB
Capacity:	4,082,110,464 bytes	3.80 GB

If you see 0 bytes capacity, that means you right-clicked the icon for a drive or slot that's empty. An empty drive has no capacity because there's no disk in it. The drive or slot doesn't have a capacity. The disk or card in it has a capacity. No disk or card in a drive means no capacity (0 bytes).

If you check the capacity of a CD-ROM or DVD-ROM that's already been burned, you might see 0 bytes free, even if the used space doesn't match the total capacity of that drive. That's because optical media (CDs and DVDs) don't work quite like other types.

If you right-click the icon for a portable device, you might not see used space, free space, or capacity. Again, that's just because the Properties sheet for a portable device tends to show information about the device as a whole, not just its storage. It's no big deal, however, because typically you copy files *from* portable devices, not to them. Also you tend to use programs such as Photo Gallery and Windows Media Player to work with portable devices, not your Computer folder.

Viewing disk contents

Disks exist for one reason only — to store information. That information is stored in files, often organized into folders. To view the contents of a disk or memory card, insert it into its drive or slot and then open (double-click) its icon in your Computer folder. Make sure you insert the disk or card first because it makes no sense to open the icon for an empty drive.

For example, if there is no DVD in your DVD drive, it makes no sense to open that icon. There has to be a disk in the drive whose contents you want to view.

Like your hard disk, external disks store data in folders and files. Each folder and file on the disk is represented by an icon. Double-click a folder's icon to view its contents. Double-click a file's icon to open the file and see its contents. Use the Back button to back out of a folder to wherever you were before.

Formatting disks

Just about everyone has heard about *formatting* a disk. But not many people really understand what that's about. So let's start with some basic rules of thumb:

- Not all disks need to be formatted. Only blank, unformatted disks and a few other types need to be formatted. But only once, not each time you use the disk.
- Never presume that you have to format a disk. If a disk needs to be formatted, you'll see a message telling you so and an option to format it right on the spot. If you don't see such a message, don't format the disk or even think about formatting the disk.
- Formatting a disk permanently erases the contents of that disk. Never format a disk unless you are 100 percent certain you will never need anything on that disk again for the rest of your life.

Don't even *think* about formatting your computer's primary hard disk. You won't be able to anyway. But formatting your hard disk would erase Windows 8, all of your installed programs, contacts, saved e-mails, and saved files — everything. You don't want to do that unless you really know what you're doing and are certain that you can easily get back everything you lost in the process.

About Folders

Information stored on a disk is organized into files. For example, a photograph is stored as a file. A song is stored as a file. The files may be organized into *folders*. Folders on a disk play exactly the same role as folders in a filing cabinet — to organize things so they're easier to find when you need them.

If you're confused as to why folders exist at all, look at it this way. Suppose you went to your filing cabinet (the real one with paper in it) and dumped the contents of every single folder onto your desk. You end up with a big messy pile of paper on your desk. Finding anything in that pile would not be easy. That's why you put things into folders in filing cabinets in the first place — to make it easy to find things when you need them.

Disks can store millions of files. If every time you opened a disk's icon you were faced with millions of filenames, you'd have the same basic problem as the mountain of papers on your desk. You'd spend all your time looking through icons and filenames rather than getting stuff done.

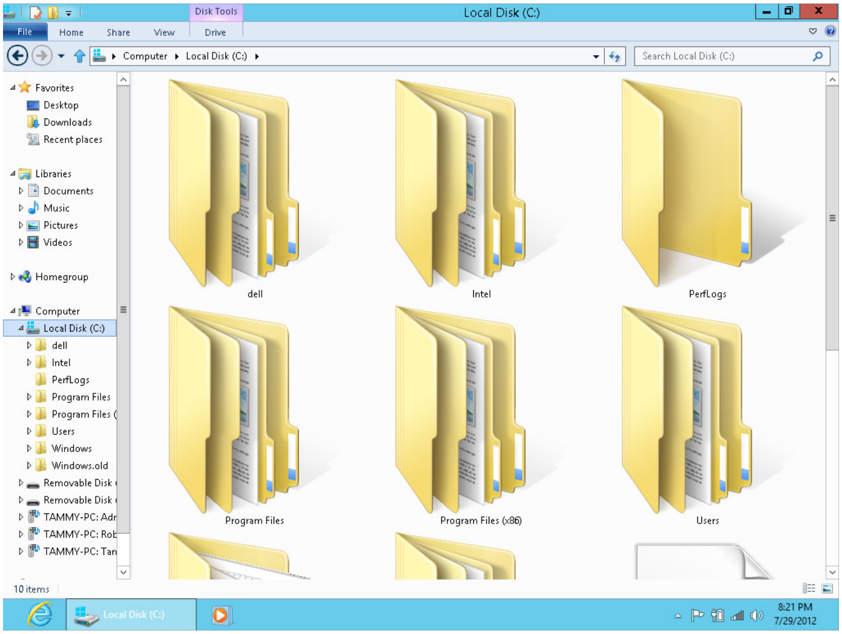
In short, folders on disks exist for exactly the same reason manila file folders in filing cabinets exist — to organize information. When you're looking at a disk's contents, it's fairly easy to tell which icons represent folders:

- The icon for a folder usually looks like a manila file folder.
- Folders are usually listed first.

Figure 27.6 shows some examples of icons that represent folders.

FIGURE 27.6

Icons that represent folders

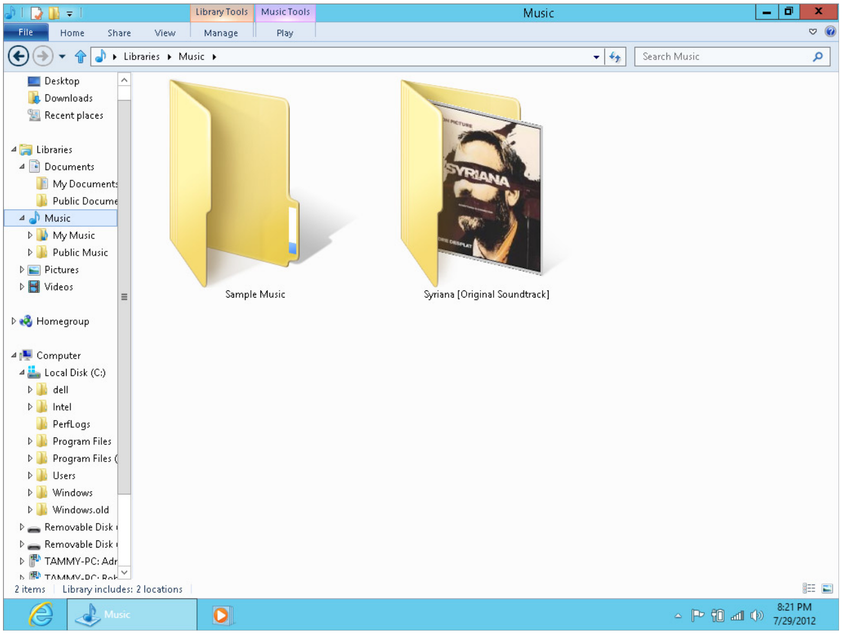

Disk Tools
Local Disk (C:)
File
Home
Share
View
Drive
Computer
Local Disk (C:)
Search Local Disk (C:)
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
dell
Intel
PerfLogs
Program Files
Program Files (
Users
Windows
Windows.old
Removable Disk
Removable Disk
TAMMY-PC: Adr
TAMMY-PC: Rob
TAMMY-PC: Tan
dell
Intel
PerfLogs
Program Files
Program Files (x86)
Users
10 items
Local Disk (C:)
8:21 PM
7/29/2012

Viewing the contents of a folder

To open a folder and see what's inside, you just double-click the folder's icon. The name of the folder whose contents you're currently viewing always appears at the end of the file path near the top of the window. The contents of the folder appear in the main pane at the center of the window. Figure 27.7 shows an example where we're viewing the contents of a library named Music.

FIGURE 27.7

Viewing the contents of a folder


Library Tools
Music Tools
Music
File
Home
Share
View
Manage
Play
Libraries ▸ Music ▸
Search Music
Desktop
Downloads
Recent places
Libraries
Documents
My Documents
Public Docume
Music
My Music
Public Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
dell
Intel
PerfLogs
Program Files
Program Files (
Users
Windows
Windows.old
Removable Disk
Removable Disk
TAMMY-PC: Adr
Sample Music
Syriana [Original Soundtrack]
2 items
Library includes: 2 locations
Music
8:21 PM
7/29/2012

It might seem odd that the folder named Music contains icons for still more folders (in the case of Figure 27.7, the Music folder contains folders named Sample Music and Syriana). But that's the way it often works. Any folder can contain still more folders, files, or both. That's different from the way folders in a filing cabinet work so let's take a look at that.

Folders within folders (subfolders)

In a filing cabinet, a folder usually contains documents, not other folders. But any computer folder can contain still more folders. We call the folders within a folder *subfolders*, but they're still just folders. For example, Figure 27.7 shows the contents of a folder named Music. All the folder icons that appear in the main pane are subfolders of that Music folder (but they're still just folders).

Subfolders allow you to organize information hierarchically so things are easier to find when you need them. For example, let's say you copy thousands of songs from your audio CDs into your Music folder with Windows Media Player or a music app. If you opened your Music folder and saw an icon for every single song, that could be a pain if you were looking for a specific song. You'd have to read through lots of filenames until you found the one you wanted.

To better organize things, Media Player organizes your songs by artist and album. So when you open your Music folder, you see a folder icon for each artist. When you open an artist's folder, you see an icon for each album by that artist. And when you open the folder for an album, you see all the songs by that artist.

So once again, the important thing to remember about folders and subfolders is that they're really just a means of organizing files into groups — the same as folders in a filing cabinet. Of course, you need to know how to *navigate* through folders for any of this to be useful, because all of your files are stored in folders.

Parent folders

The folder in which a subfolder is contained is called the *parent* to that folder. For example, if you open File Explorer and then click the Documents folder, the main document folder for your user account opens. That folder you opened is the parent to all the subfolders you see in the main pane.

TIP

When you're navigating through folders, it's easy to get to the current folder's parent. Just click its name in the Address bar. That name is the second-to-last one in the breadcrumb trail.

About Files

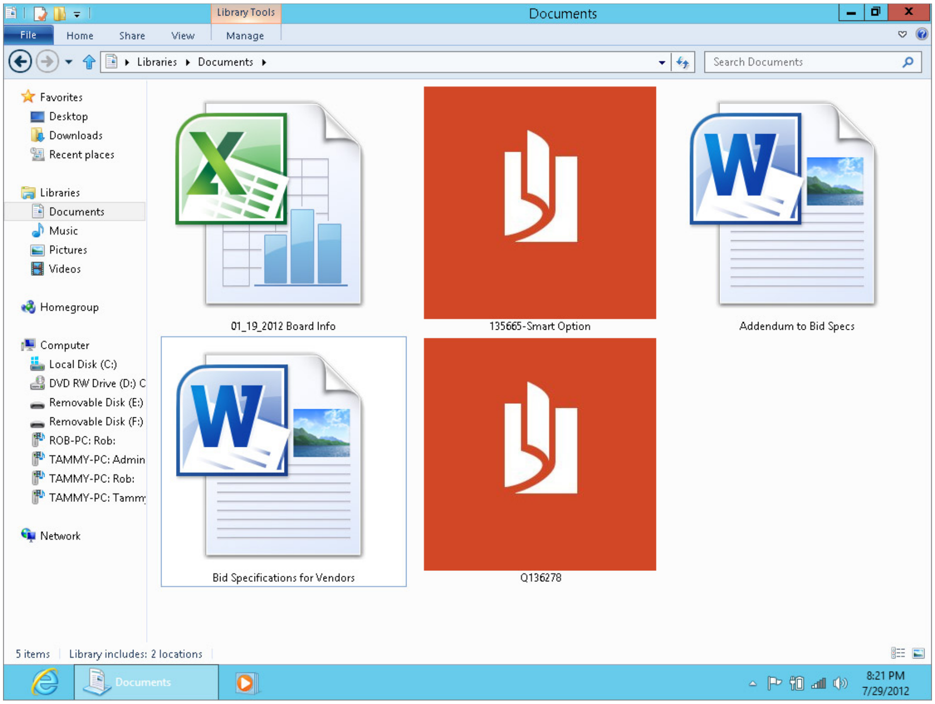
Every file has a filename and an icon. A file can be just about anything — a photograph, a song, a video clip, a typed report, a spreadsheet, a contact — whatever. In the preceding section, we likened a computer folder to a manila file folder in a filing cabinet. If we use the same analogy here, a file is roughly equivalent to one thing you'd put inside a manila file folder. In fact, that's the whole idea. You organize your computer files into folders just as you organize your paper files into manila file folders.

In the preceding section, you also saw how the icon that represents a folder often looks like a manila file folder. Icons that represent files don't have a manila file folder in their icon because that would just confuse things. Icons that represent files tend to look more like little dog-eared sheets of paper. On top of that sheet of paper you might see the logo of the program that opens or plays the file. More on that topic in a moment.

Figure 27.8 shows examples of some icons that represent files. But you have to bear in mind that there are thousands of different kinds of files and thousands of different programs. So don't expect to find those exact examples anywhere on your system. The key thing is that the icons for files don't look like manila file folders.

FIGURE 27.8

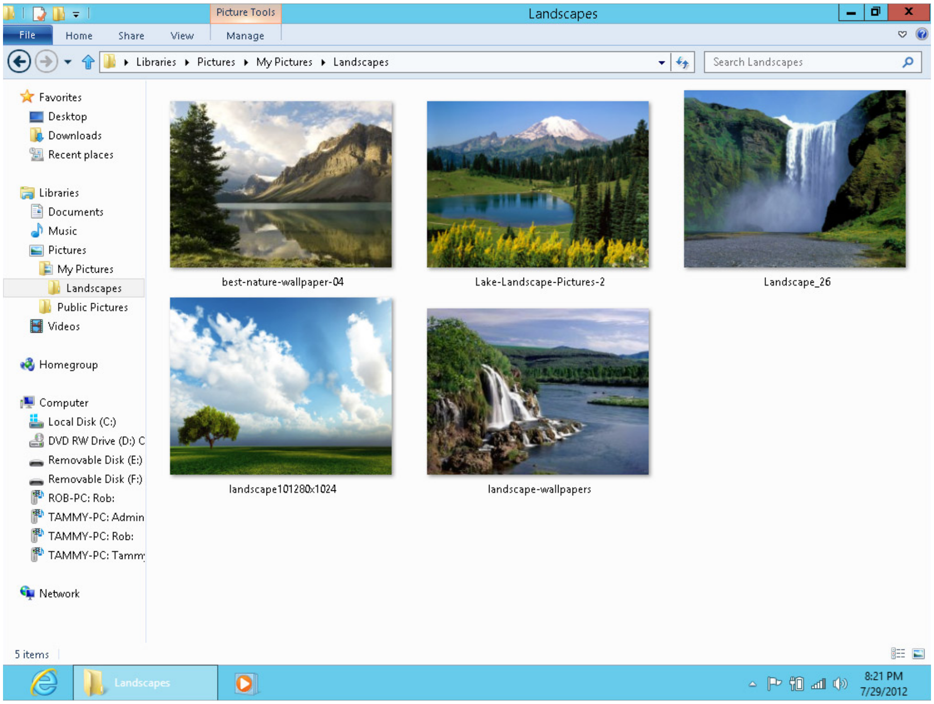
Sample icons that represent files


Library Tools
Documents
File
Home
Share
View
Manage
Libraries ▸ Documents ▸
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) C
Removable Disk (E:)
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin
TAMMY-PC: Rob:
TAMMY-PC: Tamm
Network
01_19_2012 Board Info
135665-Smart Option
Addendum to Bid Specs
Bid Specifications for Vendors
Q136278
5 items
Library includes: 2 locations
Documents
8:21 PM
7/29/2012

Pictures and videos are also files. But their icons don't always sport the dog-eared sheet of paper look. Instead, their icons usually look like the actual picture that's in the file, or a frame from the video in the file. Windows 8 shows them that way so that you don't have to open the file to see what picture it contains (see Figure 27.9).

FIGURE 27.9

Sample icons for pictures


Picture Tools
Landscapes
File
Home
Share
View
Manage
Libraries ▸ Pictures ▸ My Pictures ▸ Landscapes
Search Landscapes
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
My Pictures
Landscapes
Public Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) C
Removable Disk (E:)
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin
TAMMY-PC: Rob:
TAMMY-PC: Tamm
Network
best-nature-wallpaper-04
Lake-Landscape-Pictures-2
Landscape_26
landscape101280x1024
landscape-wallpapers
5 items
Landscapes
8:21 PM
7/29/2012

Opening and closing files

To see, change, or print what's in a file, you *open* that file. You do that in the same way that you open a folder or the icon that represents a disk drive: by double-clicking the file's icon.

TIP

You might be able to open a drive, folder, or file by single-clicking its icon. It all depends on a setting in the Folder Options dialog box described later in this chapter.

Document files never open by themselves. A file has to open within some program. There are thousands of different kinds of files and thousands of different programs so we can't tell you offhand what program that will be. But if you can open the file at all, it will open and appear within a program.

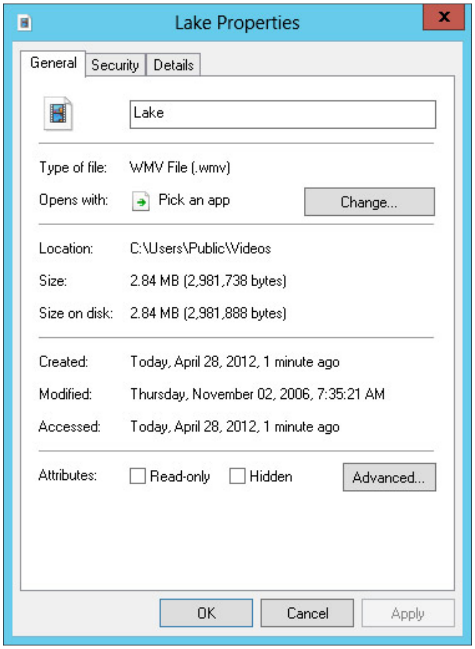
Chapter 4 discusses the basics of using programs and program windows.

Showing/hiding filename extensions

Windows uses a file's *extension* to determine what program to use to open a file. The extension is a short abbreviation, preceded by a period, at the end of the filename, as in the example shown in Figure 27.10.

FIGURE 27.10

Filename and extension



Lake Properties

Lake

Type of file: WMV File (.wmv)

Opens with: Pick an app

Location: C:\Users\Public\Videos

Size: 2.84 MB (2,981,738 bytes)

Size on disk: 2.84 MB (2,981,888 bytes)

Created: Today, April 28, 2012, 1 minute ago

Modified: Thursday, November 02, 2006, 7:35:21 AM

Accessed: Today, April 28, 2012, 1 minute ago

Attributes: ☐ Read-only ☐ Hidden

If you want to see the filename extension for a single file, right-click the file's icon and choose Properties. In the Properties dialog box that opens, you'll see the file's type (in words) followed by the extension in parentheses. For example, if you right-click the icon for a video file, you might see something like the following (the `.wmv` in parentheses is the filename extension that's hidden in Explorer's main contents pane):

Type of file: WMV File (.wmv)

To see filename extensions for all files in Explorer, click the View tab in File Explorer and choose Options. In the dialog box that opens, click the View tab and clear the checkmark next to Hide Extensions For Known File Types. Then click OK.

NOTE

Folders typically don't have extensions on their names, so you'll seldom see an extension in either its Properties sheet or Explorer.

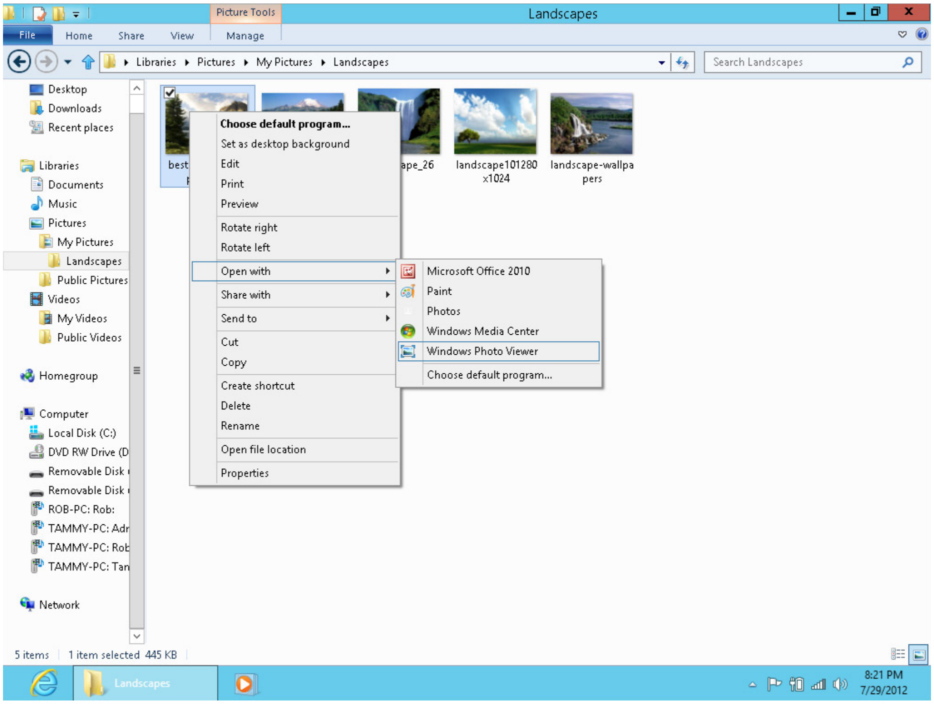
If you opt to make filename extensions visible in Explorer, you have to be careful not to change the extension when renaming a file. Changing a file's extension doesn't change the file's type. It just assigns the wrong type to the file, which could make it impossible to open the file. You'll need to rename the file back to its original extension before you can open the file again.

Choosing a program or app to open a file

The program or app that opens automatically when you open a file icon is called the *default program* for that file type. But you're not stuck with that. If you have two or more programs capable of opening a file type, you can right-click the file's icon, choose Open With, and then click the name of the program you want to open the file with (see Figure 27.11). The file will open in the specified program this one time.

FIGURE 27.11

Choosing Open With

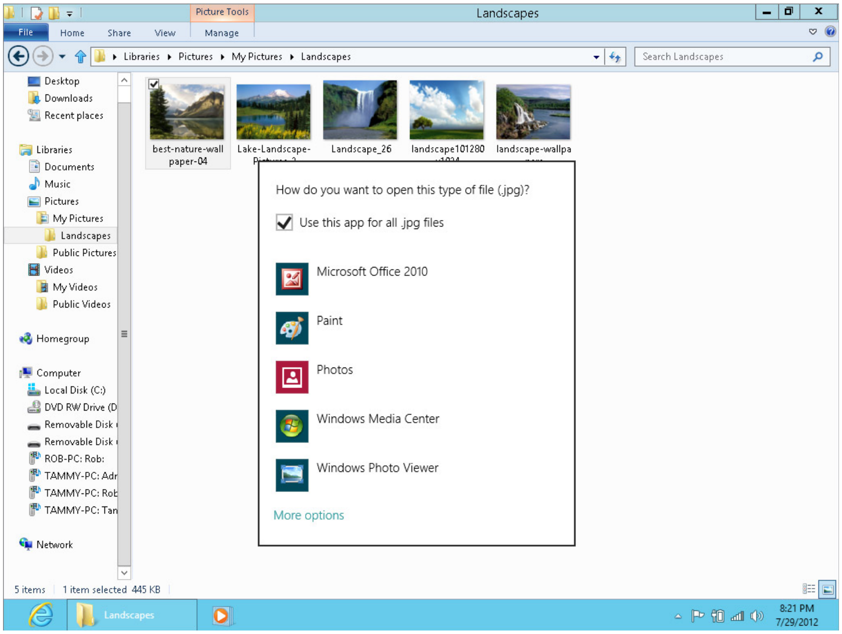

Picture Tools
Landscapes
File
Home
Share
View
Manage
Libraries ▸ Pictures ▸ My Pictures ▸ Landscapes
Search Landscapes
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
My Pictures
Landscapes
Public Pictures
Videos
My Videos
Public Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D
Removable Disk
Removable Disk
ROB-PC: Rob:
TAMMY-PC: Adr
TAMMY-PC: Rob
TAMMY-PC: Tan
Network
best
ape_26
landscape101280 x1024
landscape-wallpapers
Choose default program...
Set as desktop background
Edit
Print
Preview
Rotate right
Rotate left
Open with
Share with
Send to
Cut
Copy
Create shortcut
Delete
Rename
Open file location
Properties
Microsoft Office 2010
Paint
Photos
Windows Media Center
Windows Photo Viewer
Choose default program...
5 items
1 item selected 445 KB
Landscapes
8:21 PM
7/29/2012

Changing the default program or app

If you want to permanently change the default program or app that opens when you open a particular type of file, right-click the file's icon and choose Open With as just described. But don't click a program name. Instead, click Choose Default Program. A list appears like the one shown in Figure 27.12. This shows programs and apps that Windows 8 recognizes that will support the file type you want to open. The programs and apps that appear in your dialog box depend on the type of file you right-clicked and the programs or apps installed on your computer.

FIGURE 27.12

The open with list


Picture Tools
Landscapes
File
Home
Share
View
Manage
Libraries ▸ Pictures ▸ My Pictures ▸ Landscapes
Search Landscapes
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
My Pictures
Landscapes
Public Pictures
Videos
My Videos
Public Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D
Removable Disk (
Removable Disk (
ROB-PC: Rob:
TAMMY-PC: Adr
TAMMY-PC: Rob
TAMMY-PC: Tan
Network
best-nature-wallpaper-04
Lake-Landscape-
Landscape_26
landscape101280
landscape-wallpa
5 items
1 item selected 445 KB
Landscapes
8:21 PM
7/29/2012

How do you want to open this type of file (.jpg)?

☑ Use this app for all .jpg files

Microsoft Office 2010

Paint

Photos

Windows Media Center

Windows Photo Viewer

More options

You can click any program or app name to make it the default for opening files of the same type as the one you right-clicked. If the program or app you want to use doesn't show in the open with list, you can use the More Options link at the bottom of the list to see additional programs Windows 8 finds on your computer.

Windows 8 also includes the following links to help you find a program or app to open your selected file:

- Look For An App On The Web connects you to the File Association web page on the Internet. This page, if it recognizes your select file type (such as `.JPG` in our example), will list software and links to that software that support that file type.

- Look For An App In The Store connects you to the Windows Store online where you can search for an app that supports your selected file type.
- Look For An App On This PC displays the Open With dialog box, which you can use to navigate your computer to locate a program that will open the selected file type.

When choosing a program or app to open the file, make sure you choose a program that *can* open that file type. Otherwise you'll end up with an error message or gobbledygook when the file tries to open in that program.

To make the change permanent, select (check) the Use This App For All <file type> Files check box. By default, Windows 8 selects this option.

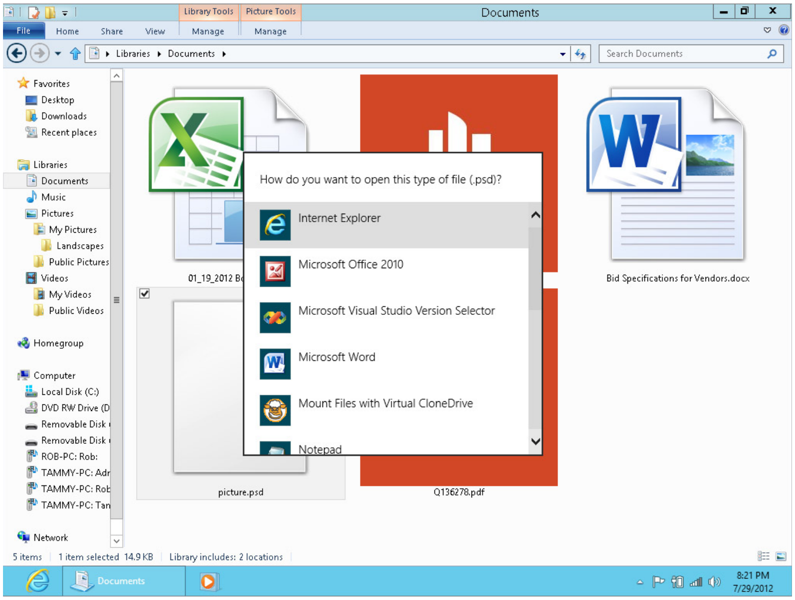
Upon selection of the program, Windows opens the program or app you specified with the selected file open. If you chose a program or app that cannot open that file type, you'll end up with an error message or a bunch of meaningless gobbledygook. If that happens, you need to get back to the open with list and choose a recommended program or app, or any program or app that you know for sure can handle that type of file.

Windows cannot open this file

It's possible that Windows won't be able to open a file at all. For example, suppose someone sends you an Adobe Photoshop file (.PSD) attached to an e-mail message. If you don't have Adobe Photoshop installed on your computer, Windows won't be able to open the file. Instead, it will display the open with list, as in the example in Figure 27.13.

FIGURE 27.13

When Windows can't open a file



How do you want to open this type of file (.psd)?

- Internet Explorer
- Microsoft Office 2010
- Microsoft Visual Studio Version Selector
- Microsoft Word
- Mount Files with Virtual CloneDrive
- Notepad

Library Tools
Picture Tools
Documents
File
Home
Share
View
Manage
Manage
Libraries ▸ Documents ▸
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
My Pictures
Landscapes
Public Pictures
Videos
My Videos
Public Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D
Removable Disk
Removable Disk
ROB-PC: Rob:
TAMMY-PC: Adr
TAMMY-PC: Rob
TAMMY-PC: Tan
Network
01_19_2012 B
picture.psd
Q136278.pdf
Bid Specifications for Vendors.docx
5 items
1 item selected 14.9 KB
Library includes: 2 locations
Documents
8:21 PM
7/29/2012

If you're new to all of this, there's no easy way to guess what program might work to open the file. As we said, there are thousands of file types and thousands of programs out there. Your best bet might be to ask the person who sent you the file what program you need to open the file. Or, ask the sender to send you the file in some other format that you can open.

File paths

Every file on your system is in a specific location defined as the *path* to the file. The path starts with the drive letter (for example, C for your primary hard disk), then the folder in which the file is stored, and then all the higher-level folders leading up to that folder. Each part of the path is separated by a backslash (\).

For example, let's say you're in your user account (Tech_Sup) and you save a file named `MyMovie.wmv` to your Videos folder. The path to that folder would be:

```
C:\Users\Tech_Sup\Videos\MyMovie.wmv
```

Figure 27.14 shows why this is so. Your hard disk has, at its highest level, at least three folders. One is named Program Files, and it contains subfolders and files for all of the programs that are installed on your system. A second folder named Users contains a subfolder for each user account. A third folder, named Windows, contains all the folders and files that make up the Windows 8 operating system.

CAUTION

The Program Files and Windows folders contain files used by the system. Your best bet is to stay out of those folders. Never save your own files to those folders. Whatever you do, never delete, move, or rename a file in any of those folders. Doing so could render your computer useless until a professional can figure out how to fix your mistake!

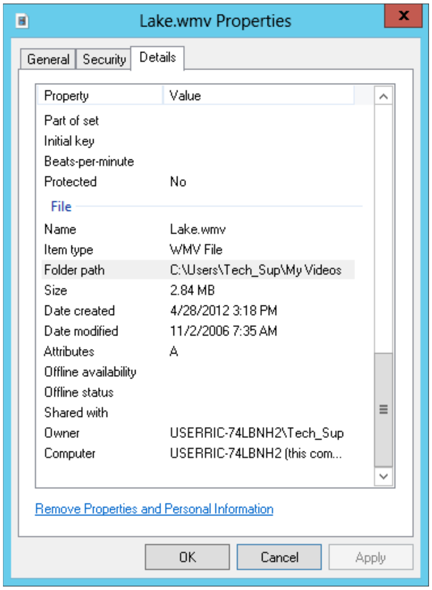
Each user account folder in the Users folder contains the built-in folders people can use to store their documents. These include the Music, Pictures, and Videos folders among others.

The path `C:\Users\Tech_Sup\Videos\MyMovie.wmv` tells Windows exactly how to get to the file. It has to start by going to the hard drive (C), drilling down through the folders named Users and Tech_Sup until it gets to the folder named Videos. There it will find the file named `MyMovie.wmv`. Figure 27.14 shows the basic idea, using a few sample folders from the folder hierarchy.

It isn't often that you need to know or type the path to a file. We mention it only because you'll see paths like that from time to time. The program you'll use to navigate through folders, File Explorer, makes it very easy for you to get around without worrying about paths.

FIGURE 27.14

C:\Users\Tech_Sup\My Videos\MyMovie.wmv



Property	Value
Part of set	
Initial key	
Beats-per-minute	
Protected	No
Name	Lake.wmv
Item type	WMV File
Folder path	C:\Users\Tech_Sup\My Videos
Size	2.84 MB
Date created	4/28/2012 3:18 PM
Date modified	11/2/2006 7:35 AM
Attributes	A
Offline availability	
Offline status	
Shared with	
Owner	USERRIC-74LBNH2\Tech_Sup
Computer	USERRIC-74LBNH2 (this com...

TIP

If you ever do need to see the actual path to the folder you're currently viewing, there's an easy way to do it. Just click the folder icon at the left side of the Address bar. The breadcrumb trail in the Address bar changes to the actual path of the folder. The path is also selected so you can press Ctrl+C to copy it to the Clipboard and paste wherever appropriate.

Using File Explorer

Knowing about drives, folders, and files is certainly important. In fact, you really can't do much with a computer until you've mastered those concepts. To review:

- All computer information is stored on some medium, usually disks.
- All the stuff that's in your computer right now is stored on a hard disk that you never see or remove from the computer.
- Information is stored in files.
- Files are organized into folders just like files in a filing cabinet are organized into folders.

Once you understand the concepts, the next step is to learn how to use the tool that gives you access to drives, folders, and files. That tool is a program named *File Explorer* (or just *Explorer* for short).

File Explorer is the main program for getting around your computer to access all the disks, folders, and files available to you. Notice that we didn't say Internet Explorer. Despite the name similarity, the two programs serve two entirely different purposes:

- **File Explorer (or Explorer):** Enables you to explore and access stuff that's *inside* your computer or on your local area network (LAN).
- **Internet Explorer:** Enables you to explore and access stuff that's *outside* your computer on the Internet.

That's a huge difference. For one thing, you have to be online (connected to the Internet) to use Internet Explorer to access resources currently online because the Internet exists outside of your personal computer. You don't have to be online to use File Explorer because all the stuff you're exploring is inside your computer.

There's also a big size difference. The Internet consists of millions of computers all over the world. A lifetime isn't nearly enough time to explore the entire Internet. Your own computer is just one computer. It doesn't take anywhere near a lifetime to explore your own computer! But you do have to invest some time in learning how to use Explorer if you want to be able to use everything your computer has to offer.

Opening File Explorer

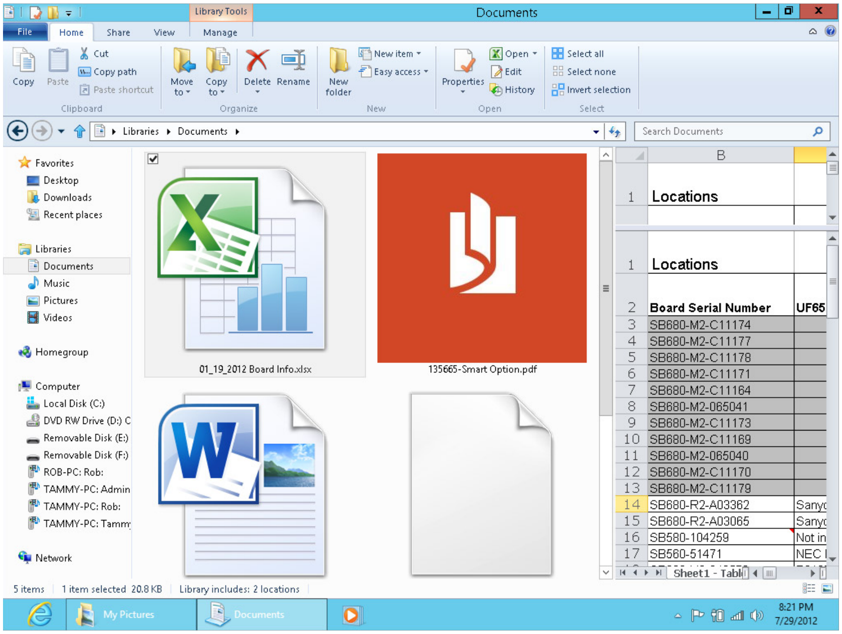
You start most programs on your computer by going through the Windows 8 interface or from pinned items on the taskbar of the desktop. You *can* start File Explorer that way if you want to. Show the Charms Bar, choose Start, and click File Explorer. You also can show the desktop and click the File Explorer icon on the Windows taskbar. Finally, you can press Windows+X and click File Explorer.

File Explorer components

File Explorer has many optional panes and other gizmos. Figure 27.15 points out the names of the main ones. Some may not be visible when you first open a folder, but they're easy to show or hide, so don't worry about that.

FIGURE 27.15

Explorer panes and tools


Library Tools
Documents
File
Home
Share
View
Manage
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Libraries ▸ Documents ▸
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) C
Removable Disk (E:)
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin
TAMMY-PC: Rob:
TAMMY-PC: Tamm
Network
01_19_2012 Board Info.xlsx
135665-Smart Option.pdf
Sheet1 - Tabl
5 items
1 item selected 20.8 KB
Library includes: 2 locations
My Pictures
Documents
8:21 PM
7/29/2012

	B	
1	Locations	
2	**Board Serial Number**	**UF65**
3	SB680-M2-C11174	
4	SB680-M2-C11177	
5	SB680-M2-C11178	
6	SB680-M2-C11171	
7	SB680-M2-C11164	
8	SB680-M2-065041	
9	SB680-M2-C11173	
10	SB680-M2-C11169	
11	SB680-M2-065040	
12	SB680-M2-C11170	
13	SB680-M2-C11179	
14	SB680-R2-A03362	Sany
15	SB680-R2-A03065	Sany
16	SB580-104259	Not in
17	SB560-51471	NEC

Here's a quick overview of the main components:

- **Quick Access toolbar:** Provides commonly used tools while you are in File Explorer. For example, the Properties button and New Folder buttons are available on the Quick Access toolbar by default. You can add other tools, including Undo, Redo, Delete, and Rename by clicking the down arrow to the right of the New Folder button.
- **Title bar:** Use this to move the whole window as convenient. Use the Minimize, Maximize, and Close buttons to size the window as you would in any other program. (See Chapter 4 for information on sizing and moving program windows.)
- **Ribbon bar:** Displays the File Explorer ribbon bar. The ribbon bar includes tabs that provide quick access to toolbar options you can perform with files and folders. Buttons in the toolbar enable you to do things with files and folders in the contents pane. Ribbon bars change depending on the types of icons you select in the folder.
- **Address bar:** Displays a breadcrumb trail (also called an eyebrow menu) of drives and folders leading up to the folder you're viewing. The name of the folder you're currently viewing appears at the end.

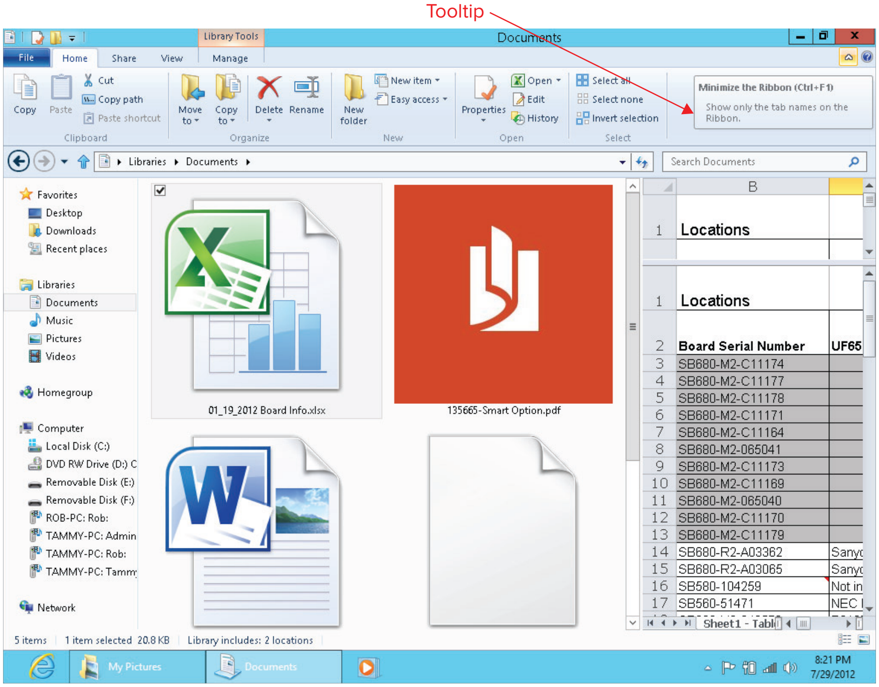
- **Search box:** Enables you to search by name for an item within the current folder.
- **Search pane:** Enables you to conduct a more thorough and exact search than the Search box. This topic is covered in Chapter 30.
- **Navigation pane:** Makes it easy to get to any drive or folder in your computer.
- **Contents:** The contents of the folder you're currently viewing.
- **Preview pane:** When you select an icon, this pane provides a sneak peek into the file's contents, when possible. Otherwise it just shows an enlarged version of the icon.
- **Details pane:** Shows some detailed information about the icon(s) currently selected in the contents pane.

Show or hide ribbon bar

New to Windows 8 is the ribbon bar on File Explorer. To show or hide the ribbon bar, click the Minimize The Ribbon or Expand The Ribbon arrow on the top right of the File Explorer window. It appear directly below the Close button (X) and to the left of the help question mark (?). To quickly show or hide the ribbon bar, press Ctrl+F1 on the keyboard. Figure 27.16 shows a tooltip displayed when you hover over the ribbon bar on/off arrow.

FIGURE 27.16

Show or hide the ribbon bar



Tooltip

Minimize the Ribbon (Ctrl+F1)

Show only the tab names on the Ribbon.

	B	
1	Locations	
2	Board Serial Number	UF65
3	SB680-M2-C11174	
4	SB680-M2-C11177	
5	SB680-M2-C11178	
6	SB680-M2-C11171	
7	SB680-M2-C11164	
8	SB680-M2-065041	
9	SB680-M2-C11173	
10	SB680-M2-C11169	
11	SB680-M2-065040	
12	SB680-M2-C11170	
13	SB680-M2-C11179	
14	SB680-R2-A03362	Sany
15	SB680-R2-A03065	Sany
16	SB580-104259	Not in
17	SB560-51471	NEC

Library Tools
Documents
File
Home
Share
View
Manage
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Libraries ▸ Documents ▸
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) C
Removable Disk (E:)
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin
TAMMY-PC: Rob:
TAMMY-PC: Tamm
Network
01_19_2012 Board Info.xlsx
135665-Smart Option.pdf
Sheet1 - Tabl
5 items
1 item selected 20.8 KB
Library includes: 2 locations
My Pictures
Documents
8:21 PM
7/29/2012

Navigating with the Address bar

No matter how you open File Explorer, it's easy to get just about anywhere from the Address bar. Don't assume that only the names in the Address bar matter. You can click the ◀ or ▶ symbol (if any), or any triangle between names to see nearby places to which you can navigate just by clicking the item's name.

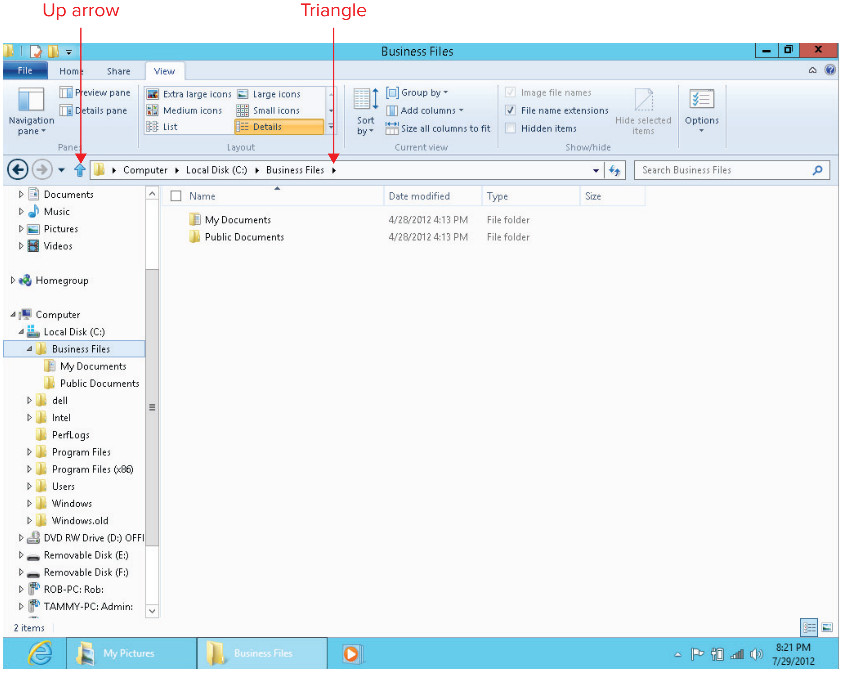
If you see the name of the folder you want to open, click that name.

- Otherwise, click the triangle to the left of any name to see its subfolders, as in Figure 27.17, and then click the folder you want to open.
- Or click the ⇧ at the left side of the trail to get to higher-level places.
- Or, click the Previous Locations button (the down-pointing triangle at the right side of the Address bar) or the Recent Pages button (the triangle to the right of the Forward button) to return to any recently visited folder.

> **NOTE**
>
> **The button with the two curvy arrows is a Refresh button. That one doesn't take you to a different location. Rather, it just ensures that the contents of the folder you're currently viewing are up-to-date.**

FIGURE 27.17

Show or hide Explorer components


Up arrow
Triangle
Business Files
File
Home
Share
View
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Computer ▸ Local Disk (C:) ▸ Business Files ▸
Search Business Files
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Business Files
My Documents
Public Documents
dell
Intel
PerfLogs
Program Files
Program Files (x86)
Users
Windows
Windows.old
DVD RW Drive (D:) OFFI
Removable Disk (E:)
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
Name
Date modified
Type
Size
My Documents
4/28/2012 4:13 PM
File folder
Public Documents
4/28/2012 4:13 PM
File folder
2 items
My Pictures
Business Files
8:21 PM
7/29/2012

You can also type the name of the folder that you want to navigate to right into the Address bar. But that works only with certain built-in folders. First, click the icon that appears at the left side of the Address bar. Then, type the first few letters of the place you want to go. A drop-down menu will display matching locations as you type. When you see the name of the folder to which you want to navigate, click that name. Or type the entire name and press Enter.

TIP

You can type the URL (address) of an Internet location into the Address bar. When you press Enter, Internet Explorer will open to show the page at that URL. To return to File Explorer, close Internet Explorer or click the taskbar button on the folder you were in.

Of course, you can also use the Back and Forward buttons to the left of the Address bar to navigate. At first, both buttons may be disabled (dimmed) because there's no place to go back or forward to. But when you go from one folder to another, the Back button is enabled, so you can click that to return to the place you just left. After you click the Back button, the Forward button is enabled. Click that to return to the folder you just backed out of.

Navigating with the Navigation pane

You can get anywhere from the Address bar. But at times, you may find it more convenient to use the Navigation pane. When open, the Navigation pane offers two ways to get around. You can use the Favorites group at the top of the pane, which shows links for commonly used folders, or any locations you want. Click any link to open it in the current window. Or you can right-click a link and choose Open In New Window to open it in a new window. This is handy when you want to move or copy files to the new location by dragging.

TIP

Choosing Open Folder Location opens a folder's parent folder. For example, right-clicking the Downloads folder in the Favorites box and choosing Open Folder Location opens your user folder (where Contacts, Favorites, My Documents, and other folders are located, along with Downloads).

In the middle of the Navigation pane is the Libraries group, which gives you quick access to your user libraries. By default, these include Documents, Music, Pictures, and Video.

Below this group is the Homegroup group, which shows shared files, printers, devices, and other resources available on your home network. If you do not have any homegroups established, see Chapter 51 for more information on setting up home networks.

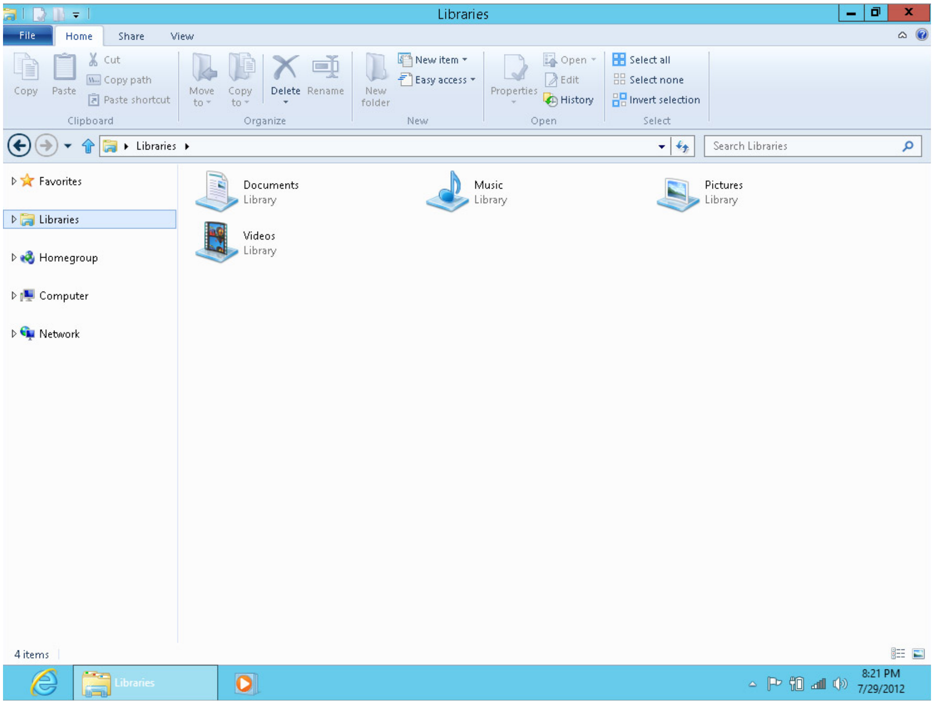
Below this group in the Navigation pane you'll find the Computer group, which includes items for your local and removable disks. You can expand each of these to access the folders they contain. Under the Computer group is the Network group, which gives you quick access to devices and shared resources on your local network.

To widen or narrow the Navigation pane, get the tip of the mouse pointer on its right border so the mouse pointer turns to a two-headed arrow. Then drag left or right.

You can expand and collapse libraries, drives, and folders in the Folders list to see more, or fewer, details. Click the white triangle next to any name to expand. Click the black triangle next to any name to collapse. Figure 27.18 shows where all these things are located.

FIGURE 27.18

Working with the Navigation pane


Libraries
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Libraries
Search Libraries
Favorites
Libraries
Homegroup
Computer
Network
Documents
Library
Music
Library
Pictures
Library
Videos
Library
4 items
Libraries
8:21 PM
7/29/2012

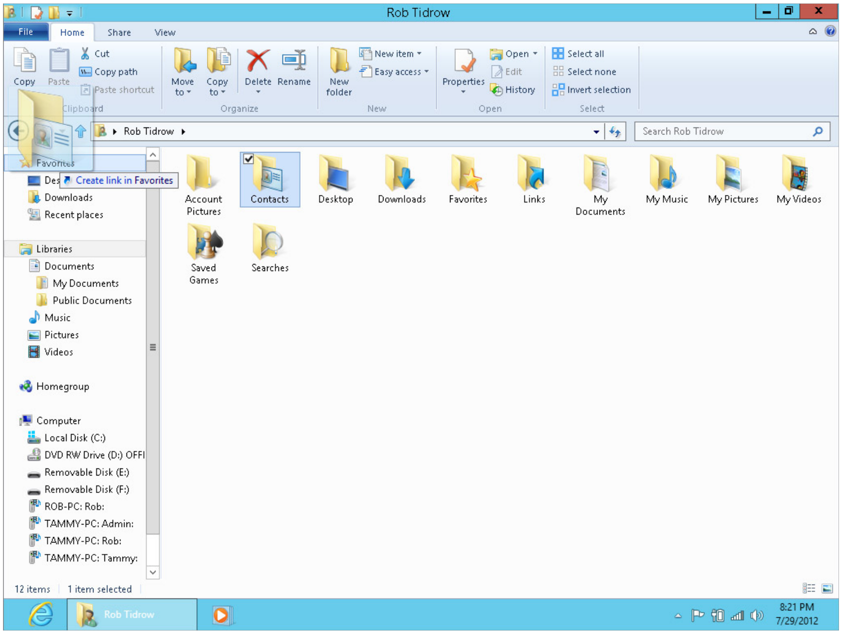
When you click a folder name or drive in the Navigation pane, it opens in the current window. If you want to open the folder or drive in a separate window, right-click and choose Open In New Window.

Adding places to Favorites

The Favorites group can provide easy one-click access to any drive or folder on your system. Initially, you'll see a few shortcuts in it. But you can replace those with any you like. Just drag the icon for any item to which you want easy access into the Favorites group. Figure 27.19 shows an example where we're in the process of dragging the Contacts icon from the user account folder into the Favorite Links pane. Release the mouse button to create the link.

FIGURE 27.19

Create your own favorite link


Rob Tidrow
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Rob Tidrow
Search Rob Tidrow
Favorites
Des
Create link in Favorites
Downloads
Recent places
Libraries
Documents
My Documents
Public Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFI
Removable Disk (E:)
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Account Pictures
Contacts
Desktop
Downloads
Favorites
Links
My Documents
My Music
My Pictures
My Videos
Saved Games
Searches
12 items
1 item selected
Rob Tidrow
8:21 PM
7/29/2012

Managing favorites

Managing favorites is easy, too. Here are the basics of managing shortcuts in your Favorites:

- To rename a shortcut, right-click the shortcut, choose Rename, type the new name or edit the existing name, and press Enter.
- To alphabetize shortcuts, right-click Favorites and choose Sort By Name.
- To remove a shortcut you don't use, right-click it and choose Remove. Then choose Yes when asked for confirmation.

NOTE

Removing a favorite does not delete the associated folder. So don't worry about losing anything when you right-click and choose Remove.

Navigating from the contents pane

The main contents pane at the center of Explorer's program window shows you the contents of whatever folder you're viewing at the moment. If the folder you've opened contains subfolders, you can open a subfolder by double-clicking its icon, or by single-clicking, if you've configured Folder Options for single clicking. After you've opened a subfolder, you can click the Back button to return to the parent folder.

If you want to open a subfolder in a separate window, right-click the folder's icon and choose Open In New Window. You can size and position the two open folder windows so you can see the contents of both. Then you can move files from one folder to the other just by dragging their icons.

What About E-mail Messages?

Computer files are like files in your filing cabinet. There's a basic assumption that you intend to keep them forever. E-mail messages aren't files, per se. They're *messages*, and they have roughly the same status as messages left on your telephone answering machine. There is a basic assumption that you don't intend to keep them. As such, messages are usually stored in folders that exist only in your e-mail client (the program you use to send and receive e-mail).

Attachments to e-mail messages are files. But they don't automatically go into the kinds of folders we're discussing in this chapter. An attachment stays in your e-mail client unless you specifically save the attachment to a regular folder such as Pictures or Documents. Exactly how you save an attachment depends on your e-mail client, but typically you right-click the attachment's icon and choose Save or Save As.

If you happen to use Windows Mail as your e-mail client, your messages *are* actually stored in folders on your computer's hard disk. Each message in Windows Mail is stored as an `.eml` file in a hidden folder under your main user folder.

Regardless of how you navigate, you can get to any folder on any drive on your system. Some people want to use buttons in the Address bar. Others want to use the more traditional Folders list in the Navigation pane. It doesn't matter which you use or how you get to the folder you need. All that matters is that you be able to get there when you need to.

Navigating to a disk drive

You can open any disk drive right from the Navigation pane. If you see a white triangle next to Computer in the Folders list, click the triangle to see all of your available drives. Click the name of the drive you want to open. Or right-click the drive and choose Open In New Window to open it in a new window. If the drive name shows a white triangle in the Folders list, you can click that triangle to see folders and files on the disk in the drive without opening the drive.

TIP

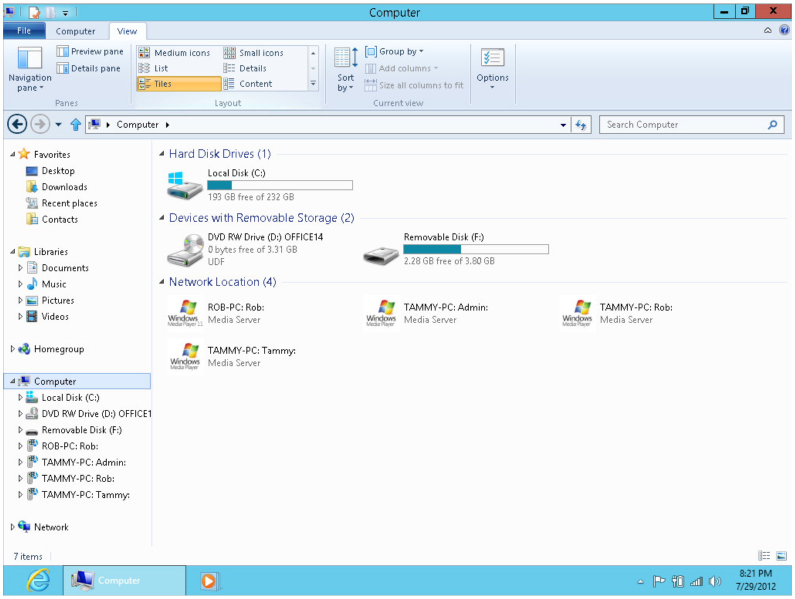
Here are a couple of tricks you can use with USB drives in the Folders list. Right-click and choose Open As Portable Device to see how much space is available. Right-click and choose Eject to close the drive before pulling it from the USB slot.

Choosing an icon view

Once you've opened a folder, you can view its contents in several different ways. As usual, there's no right or wrong way, or good or bad way. There are just different ways, and you should use whichever one is most convenient at the moment. To choose how you want to view icons, click the View tab on the File Explorer ribbon bar to see the Layout options shown in Figure 27.20.

FIGURE 27.20

Choosing a view


Computer
File
Computer
View
Navigation pane
Preview pane
Details pane
Panes
Medium icons
Small icons
List
Details
Tiles
Content
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Options
Computer
Search Computer
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFICE1
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
Hard Disk Drives (1)
Local Disk (C:)
193 GB free of 232 GB
Devices with Removable Storage (2)
DVD RW Drive (D:) OFFICE14
0 bytes free of 3.31 GB
UDF
Removable Disk (F:)
2.28 GB free of 3.80 GB
Network Location (4)
ROB-PC: Rob:
Media Server
TAMMY-PC: Admin:
Media Server
TAMMY-PC: Rob:
Media Server
TAMMY-PC: Tammy:
Media Server
7 items
Computer
8:21 PM
7/29/2012

To choose how you want to view icons, hover over any option in the Layout box on the View tab. As you move from one view to the next, such as Extra Large Icons to Details, views of your folders and files change to match the layout.

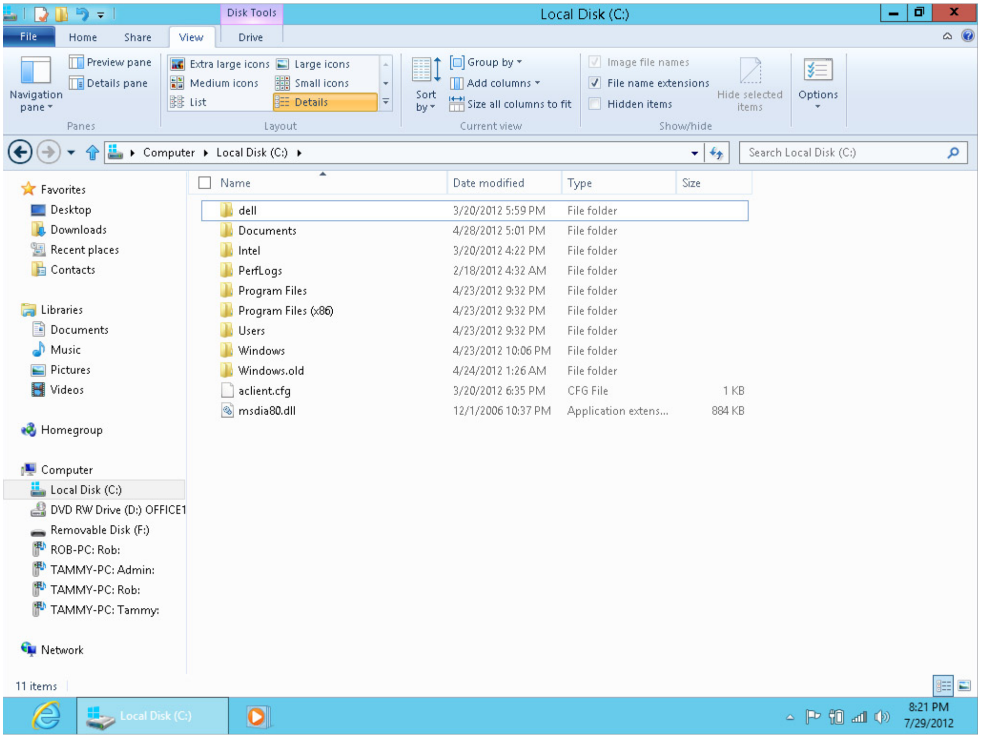
Most of the options show each item as an icon and filename. The Tiles view shows the type and size of each file. For folders, it just shows File Folder.

Using columns in the Details view

The Details view of a folder shows icons for folders and files in a tabular view like the example in Figure 27.21. You can use this view to show a lot of information about each folder and file. The column headings you see across the top of the display (Name, Date Modified, Type, and so forth) don't tell the whole story. You can choose columns to view as you see fit. Just right-click any column heading to reveal more column names, as in Figure 27.22.

FIGURE 27.21

Showing drive contents in Details view

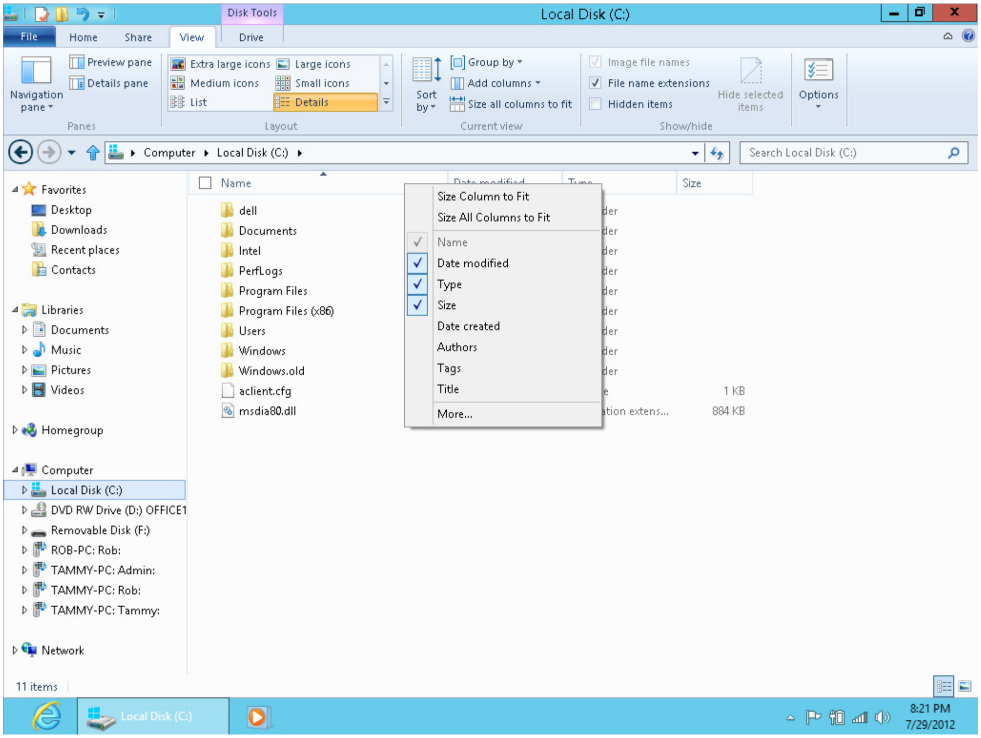

Disk Tools
Local Disk (C:)
File
Home
Share
View
Drive
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Hide selected items
Show/hide
Options
Computer
Local Disk (C:)
Search Local Disk (C:)
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFICE1
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
11 items
Local Disk (C:)
8:21 PM
7/29/2012

☐ Image file names
☑ File name extensions
☐ Hidden items

Name	Date modified	Type	Size
dell	3/20/2012 5:59 PM	File folder	
Documents	4/28/2012 5:01 PM	File folder	
Intel	3/20/2012 4:22 PM	File folder	
PerfLogs	2/18/2012 4:32 AM	File folder	
Program Files	4/23/2012 9:32 PM	File folder	
Program Files (x86)	4/23/2012 9:32 PM	File folder	
Users	4/23/2012 9:32 PM	File folder	
Windows	4/23/2012 10:06 PM	File folder	
Windows.old	4/24/2012 1:26 AM	File folder	
aclient.cfg	3/20/2012 6:35 PM	CFG File	1 KB
msdia80.dll	12/1/2006 10:37 PM	Application extens...	884 KB

FIGURE 27.22

Right-click any column heading


Disk Tools
Local Disk (C:)
File
Home
Share
View
Drive
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Computer
Local Disk (C:)
Search Local Disk (C:)
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFICE1
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
Name
Date modified
Type
Size
dell
Documents
Intel
PerfLogs
Program Files
Program Files (x86)
Users
Windows
Windows.old
aclient.cfg
msdia80.dll
1 KB
884 KB
Size Column to Fit
Size All Columns to Fit
Name
Date modified
Type
Size
Date created
Authors
Tags
Title
More...
11 items
8:21 PM
7/29/2012

To add a column to the display, click its name on the menu. To remove a column, click its name on the menu to clear its checkmark. To see other columns to display, click More at the bottom of the menu. Then select (check) the columns you want to see. Clear the checkmarks of columns you don't want to see. Then click OK.

If you choose more columns than can fit within the window, you'll see a horizontal scroll bar at the bottom of the contents pane. Use that to scroll left and right through the columns you've selected.

To size a column, put the tip of the mouse pointer on the right border of the column heading so the mouse pointer turns into a two-headed arrow. Then drag left or right. To move a column left or right, put the tip of the mouse pointer right on the column name, and then drag left or right.

TIP

The techniques for moving and sizing columns aren't unique to the Details view. They work in just about any tabular view in any program.

Sorting icons

The View tab lets you choose different ways of viewing icons. The column headings under the toolbar enable you to choose different ways of *arranging* the icons in a folder. Those column headings aren't only visible in the Details view. They're visible in all views. It might seem weird to have column headings showing when the icons aren't arranged into columns. But they're there for a good reason — you can click any one of them to sort and alphabetize icons on an as-needed basis.

To sort icons, you just click the column heading that you want to sort by. The first click usually puts the headings in ascending order (A to Z, smallest to largest, or oldest to newest). When icons are sorted into ascending order, the column heading shows an up-pointing triangle.

For example, when you click the Name column heading and see an up-pointing triangle in that column heading, you know the icons are in ascending alphanumeric order. Folders are always listed before files. So the folders will be listed first in alphanumeric order, followed by files in alphanumeric order.

TIP

Alphanumeric order sorts by letters and numbers, not just letters (as with alphabetical order).

When you click the Date Modified column heading, you sort icons by the date they were last modified. The first click puts them in ascending order (newest to oldest). The second click puts them in descending order (oldest to newest).

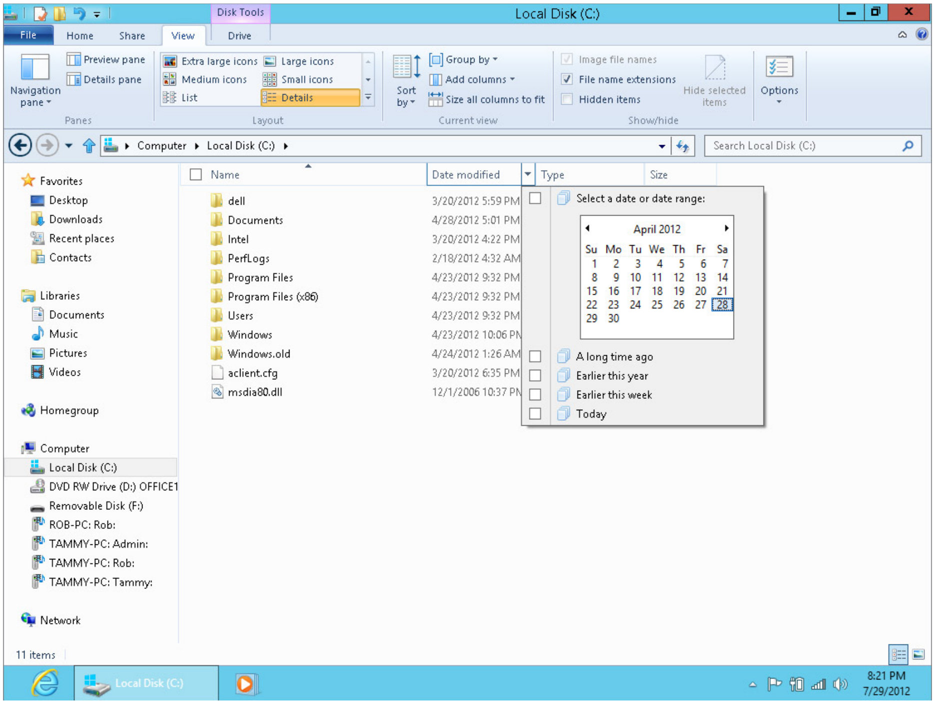
You can sort icons by any column heading, in any view. Click the Choose Columns item from the Sort By drop-down menu to sort by some other column. If the column on which you want to base the sort isn't available, you can add that column heading as described in the previous section.

Filtering a folder

When you point to a column heading in Details view, a triangle appears to the right of the column name. Clicking that triangle displays options for filtering icons in the folder. These options work best in folders or search results that contain lots of icons. The exact options you see vary from one column heading to the next because different columns offer different ways of arranging things. Depending on the age of the files you are viewing, Figure 27.23 shows options that can appear when you click the arrow next to Date Modified.

FIGURE 27.23

Click the arrow next to Date Modified


Disk Tools
Local Disk (C:)
File
Home
Share
View
Drive
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Computer
Local Disk (C:)
Search Local Disk (C:)
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFICE1
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
Type
Size
Select a date or date range:
April 2012
Su Mo Tu We Th Fr Sa
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30
A long time ago
Earlier this year
Earlier this week
Today
11 items
Local Disk (C:)
8:21 PM
7/29/2012

Name	Date modified
dell	3/20/2012 5:59 PM
Documents	4/28/2012 5:01 PM
Intel	3/20/2012 4:22 PM
PerfLogs	2/18/2012 4:32 AM
Program Files	4/23/2012 9:32 PM
Program Files (x86)	4/23/2012 9:32 PM
Users	4/23/2012 9:32 PM
Windows	4/23/2012 10:06 P
Windows.old	4/24/2012 1:26 AM
aclient.cfg	3/20/2012 6:35 PM
msdia80.dll	12/1/2006 10:37 P

Depending on the selection you make in a column's header, you can end up with a filtered view of the folder's contents. For example, if you click the arrow beside Name and place a check in the A–H box, you will only see folders or files whose names begin with any letter from A through H. The column header then shows a checkmark at the right edge of the column to indicate that a filter is applied. Click the check and clear the check box for any selection to clear the filter view and show all items. The following section offers more detail.

TIP

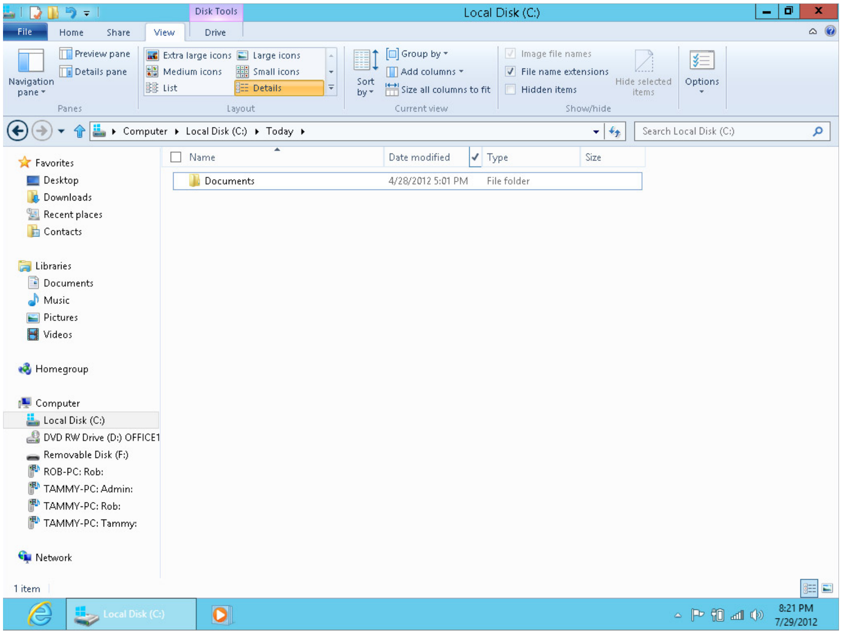
To select only files of a certain type in a folder, group by the Type column. Then click the heading of the group whose icons you want to select.

Filtering is a means of temporarily hiding things when they're just in the way. For example, let's say you're viewing a folder that contains dozens, or even hundreds, of icons. You want to focus on just the files and folders you modified today or yesterday. You don't want to delete the other icons. You just want to put them into hiding temporarily so you can focus on the more recently edited icons.

To view just the icons of files you modified today, you would select (check) the Today check box shown previously in Figure 27.23. Then click outside the menu. Icons for files that were modified today remain visible while all other icons disappear. The Date Modified column heading shows a checkmark to serve as a visual reminder that you're not viewing all icons — only icons that meet certain Date Modified criteria, as in Figure 27.24.

FIGURE 27.24

The checkmark next to Date Modified tells you some icons are hidden


Disk Tools
Local Disk (C:)
File
Home
Share
View
Drive
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Computer ▸ Local Disk (C:) ▸ Today ▸
Search Local Disk (C:)
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFICE1
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
1 item
Local Disk (C:)
8:21 PM
7/29/2012

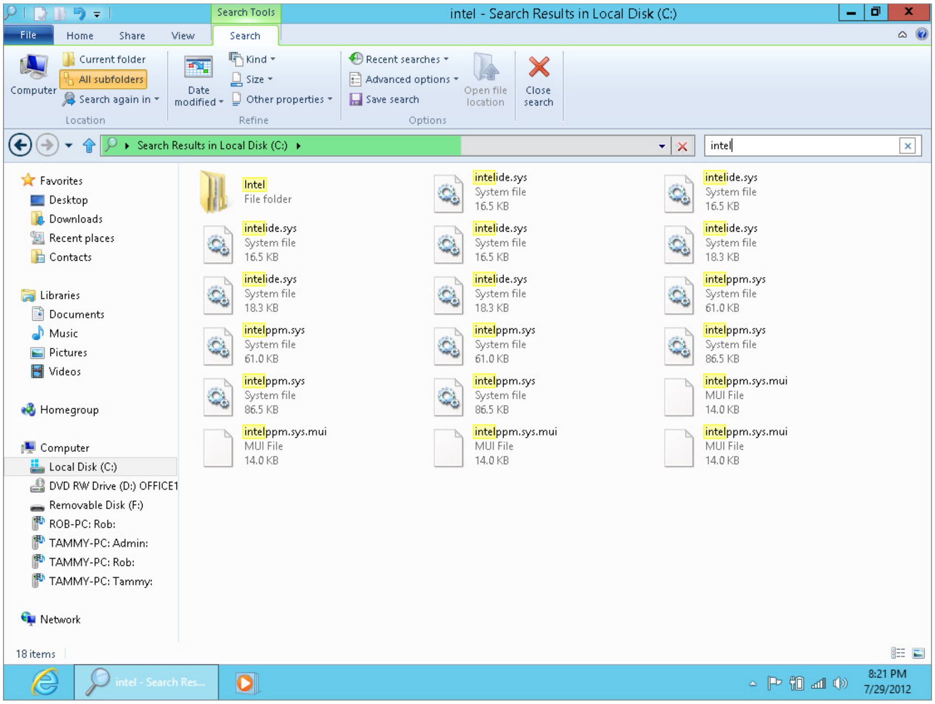
Name	Date modified ✓	Type	Size
Documents	4/28/2012 5:01 PM	File folder	

The Search box in the upper-right corner of a folder also plays a filtering role (see Figure 27.25). As you type in the Search box, only files from the current folder and its subfolders that match those characters remain visible. Icons that don't match what you've typed are temporarily hidden from view. This makes it easy to quickly locate icons in a large folder based on their names. When you search from the Search box, the Address bar shows the words "Search Results" rather than the folder name. To undo the search and bring all icons from the folder back into view, click the X button beside the Search box.

Chapters 29 and 30 discuss searching in detail.

FIGURE 27.25

Filter a view with the Search box


Search Tools
intel - Search Results in Local Disk (C:)
File
Home
Share
View
Search
Computer
Current folder
All subfolders
Search again in
Location
Date modified
Kind
Size
Other properties
Refine
Recent searches
Advanced options
Save search
Options
Open file location
Close search
Search Results in Local Disk (C:)
intel
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFICE1
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
Intel
File folder
intelide.sys
System file
16.5 KB
18.3 KB
intelppm.sys
61.0 KB
86.5 KB
intelppm.sys.mui
MUI File
14.0 KB
18 items
intel - Search Res...
8:21 PM
7/29/2012

Using the Preview pane

The optional Preview pane at the right side of Explorer tries to show the contents of whatever icon is selected in Explorer. If no icon is selected, the Preview pane shows only the words "Select a file to preview." If the Preview pane isn't open, click the View tab and choose Preview Pane in the Panes area (far left).

The window has to be wide enough to accommodate the contents of the pane and whatever else is showing. If the window is too narrow, the Preview pane disappears. You have to widen the window or close the Navigation pane to make room for the Preview pane.

See Chapter 28 for the many different ways you can select icons.

What shows in the Preview pane depends on the type of icon you select, as follows:

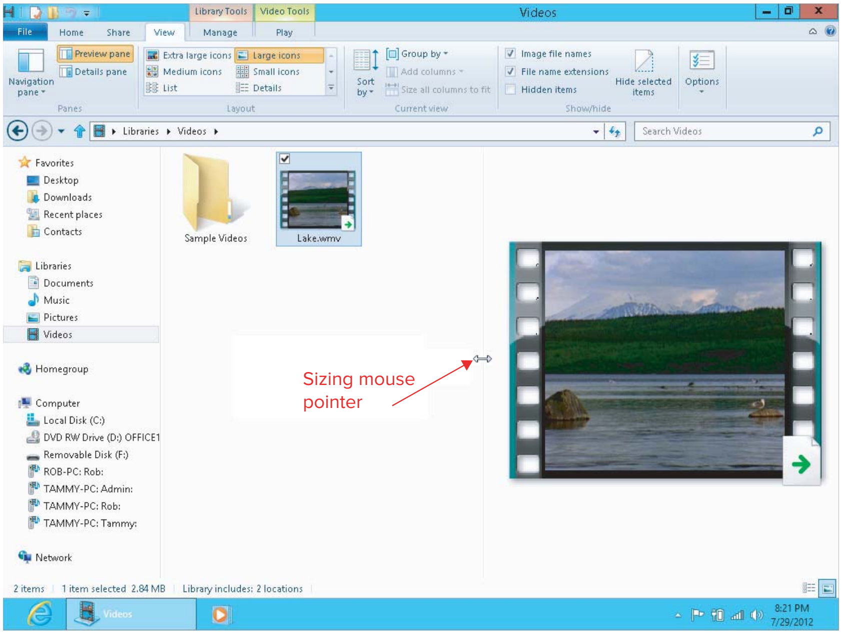
- If you select a picture's icon, the pane shows that picture.
- If you select a music or video file, the pane shows options for playing that file.
- If you select an icon whose contents can be read directly by Windows 8, you see a portion of the file's contents in the pane.
- If you select a folder icon or any file that can't be previewed, the pane just shows No Preview Available.

As with any pane, you can widen and narrow the Preview pane by dragging its inner border. Just make sure you get the tip of the mouse pointer right on the bar, so you see the two-headed arrow before you hold down the left mouse button and start dragging. The wider you make the Preview pane, the larger the preview image.

Figure 27.26 shows an example a video file icon selected in a folder. Note the two-headed mouse pointer you need to see in order to widen or narrow the pane.

FIGURE 27.26

Preview pane, selected icon, and sizing mouse pointer



Sizing mouse pointer

Library Tools
Video Tools
Videos
File
Home
Share
View
Manage
Play
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Libraries
Videos
Search Videos
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFICE1
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
Sample Videos
Lake.wmv
2 items
1 item selected 2.84 MB
Library includes: 2 locations
Videos
8:21 PM
7/29/2012

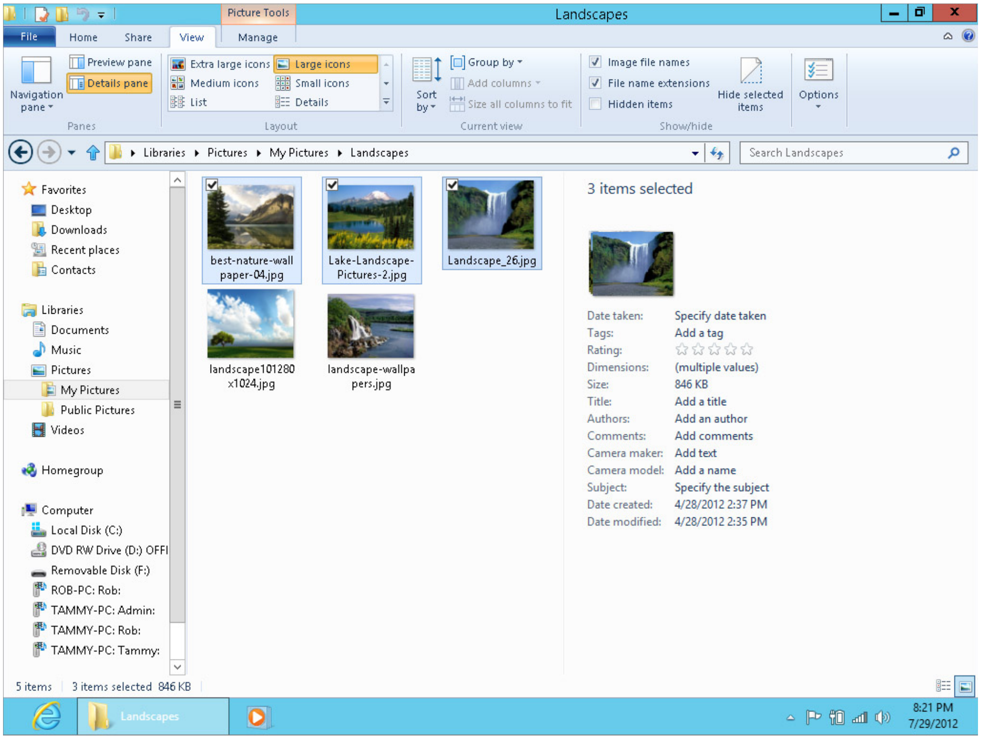
Using the Details pane

The optional Details pane at the right of Explorer's window also shows information about the currently selected icon or icons. To show or hide that pane, click Details Pane on the View toolbar. The icon(s) you select and how tall you make the pane determine how much information is displayed. Drag the left border of the pane to make it shorter or taller.

In Figure 27.27, we've selected three icons that represent files containing pictures. Depending on the type of file(s) selected, you might be able to change the Authors, Tags, Comments, Categories, Status, Content Type, or Subject of the selected items right in the Details pane. That information becomes *metadata* used by the search index to quickly find and arrange icons in a way that transcends their physical locations in folders. Chapter 30 describes *metadata* and searching in detail.

FIGURE 27.27

Details pane and three icons selected


Picture Tools
Landscapes
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Options
Show/hide
Libraries ▸ Pictures ▸ My Pictures ▸ Landscapes
Search Landscapes
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Music
Pictures
My Pictures
Public Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFI
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
best-nature-wallpaper-04.jpg
Lake-Landscape-Pictures-2.jpg
Landscape_26.jpg
landscape101280x1024.jpg
landscape-wallpapers.jpg
5 items 3 items selected 846 KB
Landscapes
8:21 PM
7/29/2012

3 items selected

Date taken: Specify date taken
Tags: Add a tag
Rating: ☆☆☆☆☆
Dimensions: (multiple values)
Size: 846 KB
Title: Add a title
Authors: Add an author
Comments: Add comments
Camera maker: Add text
Camera model: Add a name
Subject: Specify the subject
Date created: 4/28/2012 2:37 PM
Date modified: 4/28/2012 2:35 PM

To Click or Double-Click?

As mentioned throughout this book, you may have to double-click icons to open them. Or you may have to click only once on an icon to open it. Whether you have to double-click or single-click is entirely up to you. The default is usually to double-click because that method allows you to select icons by clicking, which is easier for people who haven't fully mastered the mouse.

You use the Folder Options dialog box to choose between the double-click and single-click methods. Here's how:

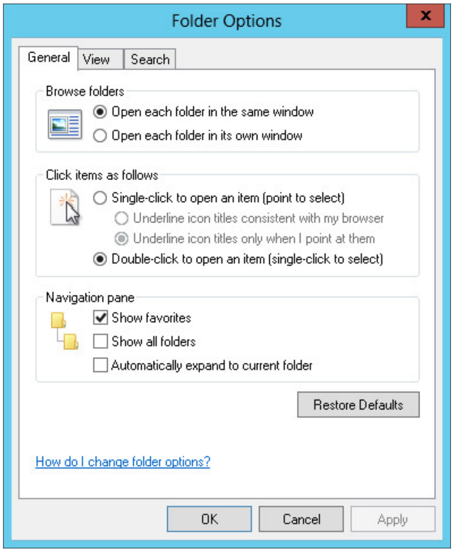
1. Open any folder so you're in File Explorer.
2. Click the Options button on the View tab. The Folder Options dialog box opens, as in Figure 27.28.
3. Under Click Items As Follows, choose how you want to handle icons:
    - **Single-Click To Open An Item (Point To Select):** Choose this option if you want to be able to open icons by clicking once. If you choose this option, also choose one of the following:
        - **Underline Icon Titles Consistent With My Browser:** Choosing this option will usually make all icon names look like hyperlinks (blue and underlined).
        - **Underline Icon Titles Only When I Point At Them:** Choosing this option leaves icon names alone so they look normal. The name only looks like a hyperlink when you touch it with your mouse pointer.
    - **Double-Click To Open An Item (Single-Click To Select):** This is the more classical approach where you have to double-click icons to open them. If you're new to computers or have difficulty using a mouse, this might be your best bet.
4. Click OK.

TIP

Here are a couple of other ways to get to Folder Options: Show the Charms Bar, choose Search, type **fol**, click Settings, and click Folder Options in the search results area. You also can open the Control Panel and choose Appearance And Personalization ⇨ Folder Options.

FIGURE 27.28

The General tab of Folder Options



Browse folders

● Open each folder in the same window

○ Open each folder in its own window

Click items as follows

○ Single-click to open an item (point to select)

○ Underline icon titles consistent with my browser

● Underline icon titles only when I point at them

● Double-click to open an item (single-click to select)

Navigation pane

☑ Show favorites

☐ Show all folders

☐ Automatically expand to current folder

Personalizing folder behavior

The Folder Options dialog box offers many options in addition to double-click and single-click preferences. On the General tab, you can choose from the following options:

- **Open Each Folder In The Same Window:** This is the default behavior; each time you open a folder, the current instance of Explorer shows the contents of that folder.
- **Open Each Folder In Its Own Window:** Choosing this option causes each folder to open in a separate instance of Explorer so you end up with an instance of Explorer for each open folder.
- **Show Favorites:** This option turns on or off the Favorites folder in the File Explorer Navigation pane. By default it is turned on.
- **Show All folders:** This option in the Navigation pane group, when enabled, causes File Explorer to show additional icons in the Navigation pane, such as Control Panel and the Recycle Bin.
- **Automatically Expand To Current Folder:** This option, if enabled, causes File Explorer to automatically expand the Navigation pane to show the currently opened folder.

When two or more folders are open, you can right-click the clock and choose the options Cascade Windows, Show Windows Stacked, or Show Windows Side By Side to arrange them in different ways on the desktop. Use taskbar buttons or Alt+Tab to switch among them.

By default, the taskbar buttons for folder windows will collapse into a single taskbar File Explorer button. You can close them all in one fell swoop by right-clicking that taskbar button and choosing Close All Windows. You can also hover the mouse over the icon to see a preview of all windows in the group.

Options on the View tab

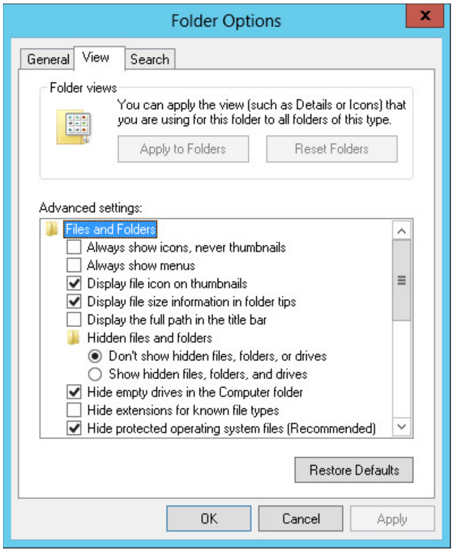
Clicking the View tab in the Folder Options dialog box takes you to a whole bunch of options for controlling folder behavior (see Figure 27.29). Most of the options are self-explanatory. If you open a folder that shows icons for pictures and a Navigation pane, you'll be able to try out many on the fly. Just fill or clear a check box and click Apply to see how it affects that open folder.

CAUTION

The settings you choose in Folder Options apply to all folders, not just the folder you have open at the moment. The one oddball exception is the first one on the tab. See "Personalizing your folder" later in this chapter for ways to customize a single folder.

FIGURE 27.29

The View tab of Folder Options



You can apply the view (such as Details or Icons) that you are using for this folder to all folders of this type.

Advanced settings:

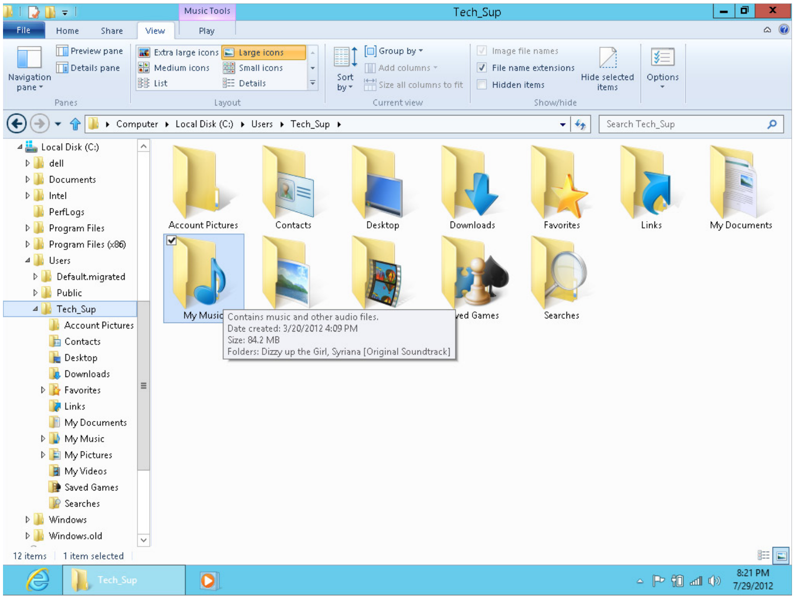
- Files and Folders
  - ☐ Always show icons, never thumbnails
  - ☐ Always show menus
  - ☑ Display file icon on thumbnails
  - ☑ Display file size information in folder tips
  - ☐ Display the full path in the title bar
  - Hidden files and folders
    - ● Don't show hidden files, folders, or drives
    - ○ Show hidden files, folders, and drives
  - ☑ Hide empty drives in the Computer folder
  - ☐ Hide extensions for known file types
  - ☑ Hide protected operating system files (Recommended)

Some options aren't quite so obvious. In the interest of being complete, we'll run through them all in the following list:

- **Always Show Icons, Never Thumbnails:** If you choose this option, icons for pictures and videos will be generic icons rather than mini-pictures of the file's contents. It might help speed things along on an extremely slow computer. But to see the picture in a file, you'll need to open that picture. You won't be able to see the picture in Explorer.
- **Always Show Menus:** Choose this option if you want the classic menu bar to open automatically with Explorer. If you don't choose this option, the menu bar is hidden when you first open Explorer.
- **Display File Icon on Thumbnails:** If you choose this option, thumbnails will show the logo of the default program for opening the file. If you clear the option, thumbnails show without the logo.
- **Display File Size Information in Folder Tips:** This option is about the size of files and folders in terms of how much disk space they use, not the visual size of the icon on the screen. When you choose this option, you're telling Explorer to show a folder's size when you point to (rest the mouse pointer on) a folder's icon. That size is the sum of the sizes of all the files in the folder. For example, all the songs in the Music folder shown in Figure 27.30 are taking up 84.2MB of disk space. You can see that in the tooltip that appears under the mouse pointer.

FIGURE 27.30

Size of folder (84.2MB) in the folder's tooltip



Music Tools
Tech_Sup
File
Home
Share
View
Play
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Options
Show/hide
Computer ▸ Local Disk (C:) ▸ Users ▸ Tech_Sup ▸
Search Tech_Sup
Local Disk (C:)
dell
Documents
Intel
PerfLogs
Program Files
Program Files (x86)
Users
Default.migrated
Public
Tech_Sup
Account Pictures
Contacts
Desktop
Downloads
Favorites
Links
My Documents
My Music
My Pictures
My Videos
Saved Games
Searches
Windows
Windows.old
Account Pictures
Contacts
Desktop
Downloads
Favorites
Links
My Documents
My Music
ved Games
Searches
12 items
1 item selected
Tech_Sup
8:21 PM
7/29/2012

Contains music and other audio files.
Date created: 3/20/2012 4:09 PM
Size: 84.2 MB
Folders: Dizzy up the Girl, Syriana [Original Soundtrack]

If you clear this option, the tooltip shows only the Date Created for the folder.

- **Display the Full Path in the Title Bar:** The title bar normally displays only the name of the folder you're currently viewing, such as `Music`. If you choose this option, the title bar shows the complete path to the file, such as `C:\Users\YourUserAccountName\My Music`.
- **Show Hidden Files and Folders:** Hidden files are those that have the Hidden attribute checked on the Properties sheet. If you choose Don't Show Hidden Files, Folders, And Drives, then files and folders that have the Hidden attribute checked won't appear at all in Explorer. If you choose Show Hidden Files, Folders, And Drives, you'll see those folders and files. But their icons are dimmed to distinguish them from items that aren't marked as hidden.

TIP

To get to the Properties sheet for a file or folder, right-click its icon and choose Properties.

- **Hide Empty Drives in the Computer Folder:** Choose this option to have Windows 8 hide drives that don't contain media. For example, if the CD drive is empty, that drive will not appear under the Computer branch of the File Explorer Navigation pane.
- **Hide Extensions for Known File Types:** As mentioned earlier in this chapter, most files have a filename extension that indicates the file type. That extension also determines which program will open when you open the file. A *known file* is one for which you already have a default program installed and defined.

  Choosing Hide Extensions For Known File Types hides filename extensions for known file types so you see only the filename without the extension for those kinds of files. Clearing that option displays filename extensions for all files.

  As always, choosing one option or the other is strictly a matter of personal preference. Sometimes it's convenient to see filename extensions. Other times they might just seem to be adding unnecessary clutter. Of course, it only takes a few mouse clicks to turn them on or off, so you can easily change from one setting to the other just as conveniently.

  There's a slight security risk to hiding filename extensions. Malware files delivered by e-mail sometimes have a dot in the filename, as in `MyDocument.txt.exe`. If filename extensions are hidden, you see only `MyDocument.txt` because the extension is the part that comes after the last dot in the name. Text (`.txt`) files are harmless, so you might open the file. Executable (`.exe`) files can contain malware. Of course, millions of `.exe` files are perfectly safe, but one where someone is trying to hide the `.exe` extension is certainly suspicious, and probably not safe. Then again, opening e-mail attachments from people you don't know, in general, isn't safe either!

- **Hide Protected Operating System Files (Recommended):** Protected operating system files are files that Windows 8 needs to do its job. These files are for the computer's use. Choosing this option keeps those files hidden so you don't see their icons. This is the recommended choice based on the "out of sight, out of mind" theory. If you can't see files you shouldn't be concerned with, you don't have to wonder what they are. Nor can you do bad things, like delete or rename them, which could cause a lot of problems with your computer.

  If you clear this option, those protected operating system files will be visible in Explorer. Do this at your own risk. If you mess with one of those files, you could render your computer inoperable.

- **Launch Folder Windows in a Separate Process:** This oddly named option really has nothing to do with processes listed in Task Manager. Typically, File Explorer sets aside a little bit of memory to store the contents of the currently selected folder. As you go from one folder to the next, it overwrites that portion of memory with the current folder's contents.

  If you choose this option, each folder's contents are stored in a separate area in memory. This won't change how things look on your screen. But if your computer crashes frequently while exploring folders, this setting might solve the problem.

- **Show Drive Letters:** By default, whenever you open your Computer folder, each drive's icon displays both a friendly name and a drive letter (such as C). Choose this option if you want to hide the drive letters and see only the friendly name.
- **Show Encrypted or Compressed NTFS Files in Color:** The NTFS file system used in Windows 8 lets you encrypt and/or compress folders. Choose this option if you want the names of those folders to appear in color, to distinguish them from regular unencrypted, uncompressed folders. Names of encrypted folders will be green. Names of compressed folders will be blue.

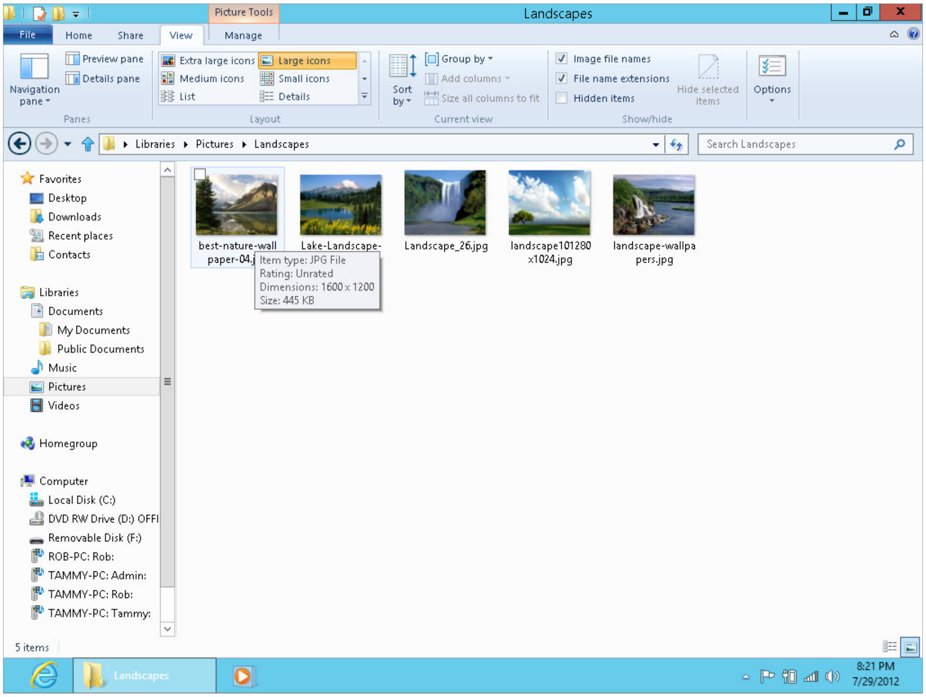
NOTE

To compress or encrypt a file, right-click its icon and choose Properties. Then, click the Advanced button in the Properties dialog box that opens. You can compress the folder (to reduce its size) or encrypt it to secure its contents. But you can't do both.

- **Show Pop-up Description for Folder and Desktop Items:** Selecting this option ensures that when you point to a file, folder, or desktop icon you see a tooltip like the example in Figure 27.31. If you clear this option, you won't see a tooltip when pointing to such an icon (or anything else).

FIGURE 27.31

Pointing to a folder icon shows a description in a tooltip


Picture Tools
Landscapes
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Libraries ▸ Pictures ▸ Landscapes
Search Landscapes
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
My Documents
Public Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFI
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
best-nature-wallpaper-04.j
Lake-Landscape-
Landscape_26.jpg
landscape101280x1024.jpg
landscape-wallpapers.jpg
5 items
Landscapes
8:21 PM
7/29/2012

Item type: JPG File
Rating: Unrated
Dimensions: 1600 x 1200
Size: 445 KB

- **Show Preview Handlers in Preview Pane:** When you select a file icon in Explorer, the Preview pane (if open) will attempt to show some content from that file. It doesn't work with all file types, so often you'll just see "No preview available."

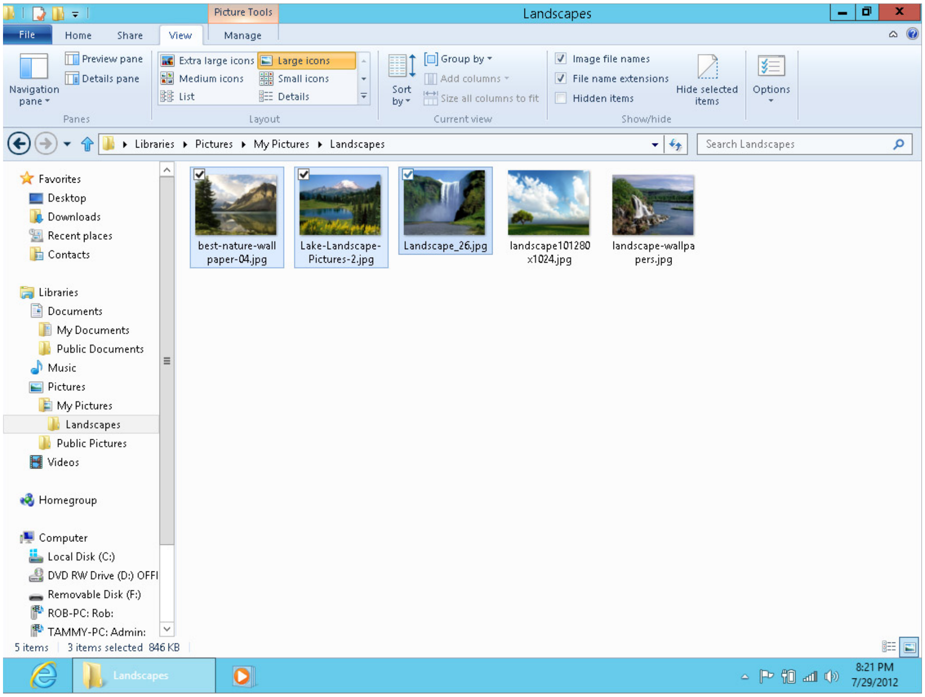
  If you clear this option, the Preview pane will never attempt to show the contents of any file icon you select. If it takes too long to show the contents of a file, and that's slowing you down, clearing this option will help speed things along. But you won't see the contents of any file you select.

- **Use Check Boxes to Select Items:** Chapter 28 describes different ways you can select icons in a folder. If you find it difficult to use those techniques, choose this option to have each icon show a check box. Then you can select multiple icons by clicking their check boxes. You'll also see a check box next to the Name column heading. Select (check) that one if you want to select all icons in the folder.

  Figure 27.32 shows an example. The first three files in the list are selected, as indicated by highlighting and their checkmarks.

FIGURE 27.32

Use check boxes to select icons


Picture Tools
Landscapes
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
☑ Image file names
☑ File name extensions
☐ Hidden items
Hide selected items
Options
Show/hide
Libraries ▸ Pictures ▸ My Pictures ▸ Landscapes
Search Landscapes
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
My Documents
Public Documents
Music
Pictures
My Pictures
Landscapes
Public Pictures
Videos
Homegroup
Computer
Local Disk (C:)
DVD RW Drive (D:) OFFI
Removable Disk (F:)
ROB-PC: Rob:
TAMMY-PC: Admin:
☑ best-nature-wallpaper-04.jpg
☑ Lake-Landscape-Pictures-2.jpg
☑ Landscape_26.jpg
landscape101280x1024.jpg
landscape-wallpapers.jpg
5 items
3 items selected 846 KB
Landscapes
8:21 PM
7/29/2012

- **Use Sharing Wizard (Recommended):** To share a folder or file with other users, you typically right-click the icon and choose Share, or select icons and click Share in Explorer's toolbar. When you choose this option, the Sharing Wizard opens to help you through the sharing process.

  If you clear this option, the Sharing Wizard won't open when you click the Share button. Instead you're taken to the folder's Properties dialog box. There, you share the folder by choosing specific options rather than using the simpler wizard.
- **When Typing into List View:** The options in this group determine what happens when you start typing in a list view. The default behavior is to select the item that matches what you are typing. You can instead choose to have the text you type appear in the Search box instead.
- **Restore Defaults:** Click this button if you've experimented with settings and want to get things back the way they were originally set in Windows 8.

As always, be sure to click OK after changing options in the Folder Options dialog box.

Saving Things in Folders

The most common complaint among casual computer users is the inability to find things they're certain they've saved. This occurs because users don't choose *where* they want to save an item, or *what* they want to name it. They just click the Save button. This is roughly the same as handing an important paper document to a colleague and saying "stick this in the filing cabinet somewhere, but don't tell me where you put it." Finding that document later isn't going to be easy.

Another common mistake is to save things on external media such as flash drives, DVDs, CDs, and such. That's a bad idea. You only use external media to save *copies* of files that you've previously saved on your hard disk. The copy might be for backup or to give to a friend. But either way, it should be a copy of the file, not the one-and-only original file.

TIP

If the goal of storing a file on an external disk is to conserve hard disk space, ask yourself this: "How much hard disk space do I have available right now, and how much will I have after I save this file to my hard disk?" If the answer is "I don't know," you may be wasting your time, energy, and a ton of available hard disk space!

What folder should I use?

Windows 8 comes with several folders already created for you to store your files in. When you're saving a file, first ask yourself "What is this thing I'm saving?" Then based on your answer, use the folder whose name matches the type of thing you're saving:

- If it's a picture or photograph, save it in your Pictures folder.
- If it's a video, save it in your Videos folder.
- If it's a song or sound clip, save it in your Music folder.
- If it's any other kind of typed document or worksheet, save it in your Documents folder.

There's no rule that states you *must* save a file in a specific folder. Remember, folders exist mainly to help you organize files so they're easy to find later when you need them. Also, saving to a folder is no big commitment. You can easily move any file from any folder to another folder whenever you want.

How to save in folders

There are basically two times when you have to choose where to save a folder:

- After you've created a new document from scratch in some program and chosen File ⇨ Save from that program's menu, or closed the program and answered Yes when asked if you want to save it
- When you've opted to download a file from the Internet and chosen Save

In either case, a dialog box titled Save (perhaps Save As, Save Picture, or Save Webpage, or something like that) appears. It's in that dialog box where most people make their mistake. They click the Save button without first thinking about and specifying where to put the file and what to name it.

TIP

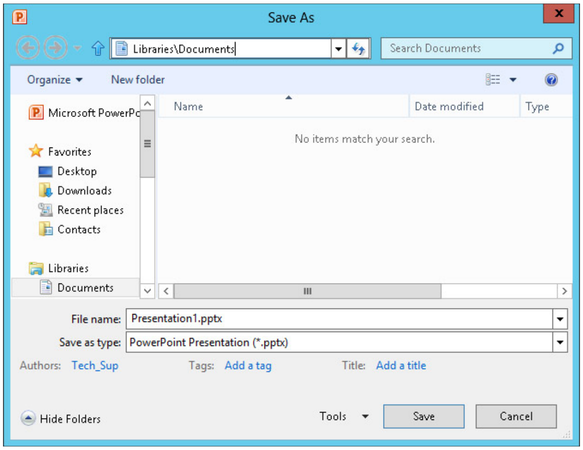
Why do the Save and Save As dialog boxes look the same for many different programs? The answer is: They *are* the same. Windows 8 includes a "stock" set of dialog boxes that any program can invoke when opening or saving files. Other programs provide their own custom dialog boxes to add capabilities, but most use the standard Windows dialog boxes.

Saving in Windows 8–style dialog boxes

The Windows 8–style Save As dialog box is shown in Figure 27.33. The name at the end of the Address bar is the name of the folder where the file will be saved unless you specify otherwise. In the example shown, you can see that the file will be saved in the Documents folder for the current user. At the very least, you should look at that name so you know where the file is going, and where you can find it in the future.

FIGURE 27.33

Sample Windows 8–style Save As dialog box


Save As
Search Documents
Organize
New folder
Microsoft PowerPo
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Name
Date modified
Type
Hide Folders
Tools
Save
Cancel

Libraries\Documents

No items match your search.

File name: Presentation1.pptx

Save as type: PowerPoint Presentation (*.pptx)

Authors: Tech_Sup

Tags: Add a tag

Title: Add a title

If you don't want to save the file to the folder that's suggested in the Address bar, navigate to the folder in which you want to save the file. A simple way to do this is to navigate folders and drives in the Navigation pane (left-side pane). Then click the folder into which you want to save the document.

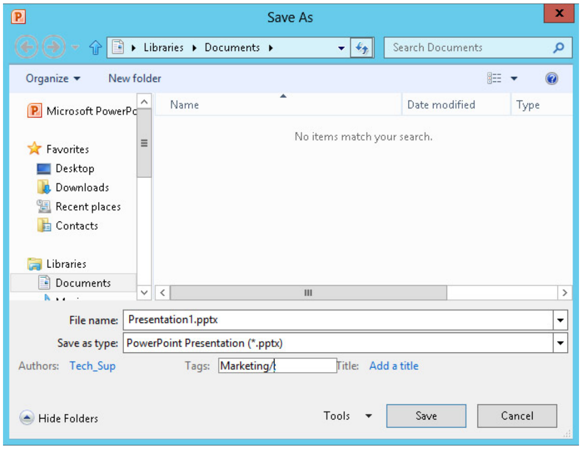
CAUTION

Another common mistake is to save the file in an inappropriate place such as the desktop or a subfolder under `C:\Program Files` or `C:\Windows`. Those places are not for storing documents so don't save things there.

Depending on the type of document you're saving, you may be given an option to enter *metadata* such as an author's name, tags, or other information. Metadata is information *about* the file that is stored in the file's properties or Windows 8's search index. At first, you might see only a couple of metadata options. If you enlarge the Save As dialog box by dragging any corner or edge, you might see many more. Figure 27.34 shows an example from Microsoft PowerPoint, which lets you add tags to the file.

FIGURE 27.34

Sample *metadata* tags entered


Save As
Libraries ▸ Documents ▸
Search Documents
Organize ▾
New folder
Microsoft PowerPo
Favorites
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Name
Date modified
Type
Tools ▾
Save
Cancel
Hide Folders

No items match your search.

File name: Presentation1.pptx

Save as type: PowerPoint Presentation (*.pptx)

Authors: Tech_Sup

Tags: Marketing/

Title: Add a title

Fill in whatever *metadata* seems appropriate for your way of organizing and searching for things. If you're not up on Windows 8–style searching yet, don't worry about it. You can still add any information that seems reasonable. But the main thing to keep in mind when filling in the blanks is the question "If I lost this thing, what word(s) might I type into the Search box to find it?" Whatever words come to mind are the words you should put into *metadata*. Also keep in mind that Windows 8 can search within documents to find words or phrases in the document.

After you've chosen where you want to save the file (and filled in some *metadata*, if available), you can name the file.

Tips on Naming Things

Whenever you save a file or create a folder, you need to give it a name. Before you do, ask yourself "If I needed this thing a year from now, and forgot its name, what would I look for?" Whatever word pops into your head is probably the best name to give to the item. You're not limited to a single word, but you want to keep the name short. There's not always room to show the entire name of a file or folder. So put the most important word first so that if the name is cut off, you can at least see the most recognizable part of the name.

In some situations, it makes sense to name files by number. When using numbers to name files, it's best to use the same amount of digits in each number. Otherwise, when you sort by name, files won't be in the order you expect. For example, for this book, we know there will never be more than 99 pictures in a chapter. So we use two-digit numbers for each figure. The 27 is the chapter number. The last two digits are the figure number. So the first figure is 2701 and the highest possible figure number is 2799. You can use hyphens in a name if you prefer, such as 27-04.

If you name things by date, consider using the *yyyymmdd* format. This provides for the best results when sorting by name. But again, you need to be consistent about it, always using four digits for the year, two for the month, and two for the day, for instance, 19990101 or 20121231. It's okay to use hyphens if you like.

Naming the file

After you've chosen *where* you want to save the file, the next step is to choose *what* to name it. Again, think to yourself "If I were to look for this thing six months from now, what name would I look for?" Then name the file accordingly. Keep the name short and specific. You can use spaces and some basic punctuation such as apostrophes. The characters `\ / ? : * '' > <` and | are not allowed in a filename because they have special meanings and will be rejected.

Choosing a Save As type

It's usually best to ignore the Save As Type drop-down at the bottom of a Save dialog box. The suggested type is the "normal" type for the type of file you're saving. If you have a good and specific reason for choosing a different type, then go ahead and choose it. But otherwise you might just create unnecessary headaches for yourself!

Click Save

The last step in the process of saving a file is to click the Save button in the dialog box. Before you do, you might want to take a quick look at the last folder name in the Address bar again or the name in the Save In box so you know where you're about to save the file. Take another quick look at the name in the File Name box so you know its name. Then click Save. The file is saved to the folder you specified with the name you specified.

Opening the saved file

To open the file in the future, use File Explorer to navigate to the folder in which you placed the file, as described earlier in this chapter. Then double-click the file's icon.

Nothing Happens When I Save!

The *first* time you save a new document, the Save As dialog box opens so you can tell Windows where you want to put the file and what you want to name it. When you click Save, the document is saved.

Every time you save after that, the program saves only changes you made since your last save to that same file. It doesn't ask where to put the file or what to name it again. It just brings the currently saved copy up-to-date with what's on your screen. That's important, and not doing that often enough is yet another common beginner mistake.

It's important to save your work often because that's what keeps the permanent copy on your disk up-to-date with the copy you see on the screen. While creating or editing a document, you should save every two minutes or so, even if your application autosaves for you. That way, if a power outage or other mishap wipes the document off your screen, the most you can lose is two minutes of work!

If the file you saved is a document, you may be able to re-open it by opening the program you used to create the document, and then opening its File menu and clicking the filename on the recently used list (this name varies according to the program or app). But keep in mind that those places only include recently used files. Your file won't stay in either list forever!

After you open the file, keep in mind that changes you make are not *saved* automatically by most programs. Changes you make to an open file are stored in RAM, not on the hard disk. If you want to save changes you've made, you must choose Save from the File menu while the document is open. Or remember to choose Yes when asked about saving your changes when you close the document.

Creating Your Own Folders

You can create your own folders at any time. For example, if you have many files in your Documents folder or some other folder, you might want to start organizing into subfolders within your Documents folder. You can create as many folders as you wish and name them anything you wish. You can move or save any files you wish into any folder you create.

The main trick when creating your own folders is to put them where they make the most sense. Any folder you create will be a subfolder of some other folder. So the first thing you want to do is get to that *parent folder* — the folder in which your own custom folder will be stored. If you're new to all of this and are not sure what we're talking about, here are some suggestions:

- If you're creating a subfolder to organize pictures, use your Pictures folder as the parent folder.
- If you're creating a subfolder to organize songs, use your Music folder as the parent folder.
- If you're creating a subfolder to organize videos, use your Videos folder as the parent folder.
- If you're creating a subfolder to organize some other type of files, use your Documents folder as the parent folder.

You can create a folder anywhere you like. The preceding items are just suggestions. For example, you can create a folder on an flash drive, memory card, or external hard drive. In those cases, whichever disk is currently in the drive would be like the parent folder. Make sure you put a disk in the drive before you perform the following steps:

CAUTION

You can create folders on CDs and DVDs, too, but not necessarily by following the steps here. You must create the folders first in File Explorer, and then when you copy those files to the CD or DVD, Windows 8 duplicates your file and folder structure on the disc.

1. In File Explorer, open the parent folder for the folder you're about to create. Or open your Computer folder and then open the icon for the disk drive on which you want to create a folder.
2. Do whichever of the following is easiest for you:
    - Choose Home tab ⇨ New Folder.
    - Right-click some empty space below or to the right of icons in the current folder and choose New ⇨ Folder.
3. Type in a name of your own choosing and press Enter.

The new folder appears with the name you specified. When you double-click its icon to open it, you'll find it's empty. That's because it's brand new and you haven't put anything in it yet. (Click the Back button or press Backspace to leave the folder.)

TIP

If you're not happy with the name you gave to a folder, right-click its icon and choose Rename. Then type the new name or edit the existing name and press Enter.

You can move existing files into the folder using techniques described in Chapter 28. You can save new files to the folder just by opening the folder from the Save dialog box.

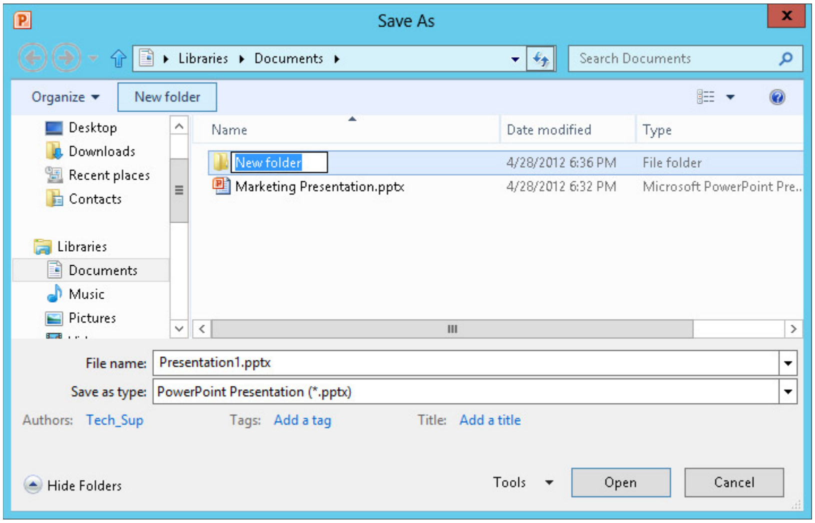
Creating folders on the fly while saving

There may be times when you're in the middle of saving a file and suddenly think "I should have created a new folder for this file and others like it." You don't have to cancel out of the current save operation to create a folder. Instead, navigate to the folder that will act as the parent to the new folder you want to create.

If you're using a Windows 8–style Save dialog box, right-click in the file list area of the dialog box, as shown in Figure 27.35, and click New ⇨ Folder. Or click the New Folder button on the Save As dialog box. If you're using an older-style Save dialog box, point to each toolbar button until you find the one that lets you create a new folder at the bottom of that same figure, and click it. A new empty folder appears in the main pane at the center of the dialog box. Type in a new name of your own choosing and press Enter.

FIGURE 27.35

Create a folder on-the-fly while saving


Save As
Libraries
Documents
Search Documents
Organize
New folder
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Music
Pictures
Hide Folders
Tools
Open
Cancel

Name	Date modified	Type
New folder	4/28/2012 6:36 PM	File folder
Marketing Presentation.pptx	4/28/2012 6:32 PM	Microsoft PowerPoint Pre...

File name: Presentation1.pptx

Save as type: PowerPoint Presentation (*.pptx)

Authors: Tech_Sup Tags: Add a tag Title: Add a title

Double-click the new folder's icon in the main pane of the Save As dialog box so that name appears at the end of the Address bar or in the Save In box. Then click the Save button in the dialog box. Your file is saved in that new folder.

Personalizing your folder

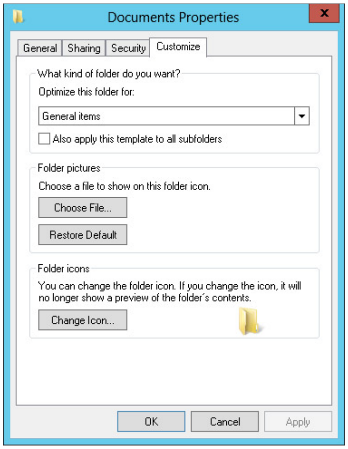
You can customize a folder in several ways. Unlike the Folder Options described earlier, which apply to all folders, these settings apply to only one folder — the one whose icon you right-click to specify your settings. To get started on customization, first right-click the icon you want to customize and choose Properties. In the Properties dialog box that opens, click the Customize tab to see the options shown in Figure 27.36.

TIP

You can't access the Customize tab when working from a Windows 8 library. For example, if you create a folder in your Documents folder and then open its properties, the Customize tab will be missing. However, you can open `C:\Users\YourAccount\My Documents`, where `YourAccount` is your Windows account name, and then right-click the folder you want to customize and choose Properties.

FIGURE 27.36

Customize tab for a folder's properties



What kind of folder do you want?

Optimize this folder for:

General items

☐ Also apply this template to all subfolders

Folder pictures

Choose a file to show on this folder icon.

Folder icons

You can change the folder icon. If you change the icon, it will no longer show a preview of the folder's contents.

Specify a folder type

All folders have a default view that defines what tools appear in the toolbar and how icons look when you first open the folder. To define a default view, click the button under "What kind of folder do you want?" and choose from the menu. There isn't any rule that says you must choose a specific kind. But in general, you want to choose an option that reflects the type of items that the folder contains, or will contain:

- **General Items:** Use this option if the folder will contain multiple file types and subfolders.
- **Documents:** Use this type if the folder will contain mostly non-media document files (text, spreadsheets, database data, and such).
- **Pictures:** Use this if the folder will contain pictures.

- **Music:** Use this if the folder will contain mostly albums or other subfolders that contain songs.
- **Video:** Use this if the folder will contain mostly video files.

If you want your selection to be applied to subfolders within the folder, choose Also Apply This Template To All Subfolders.

NOTE

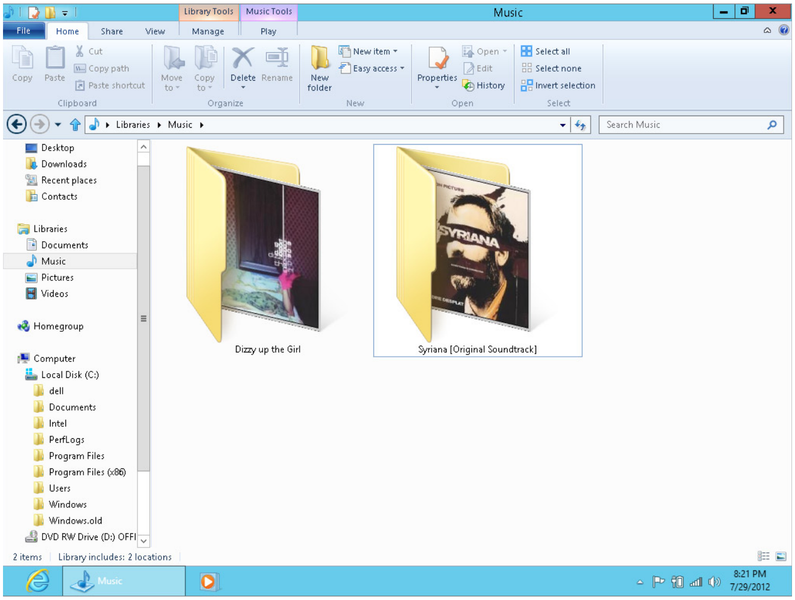
If you chose Remember Each Folder's View Settings in the Folder Options dialog box, the view you were using when you left the folder will override the default view.

Folder pictures

Folder icons always look like partially opened manila file folders because, like real-world manila file folders, computer folders are containers in which you store files (written documents, pictures, songs, videos, and such). Items listed in the folder represent files that are actually in the folder. For example, folders that contain albums show the covers of albums that are in the folder, as in Figure 27.37.

FIGURE 27.37

Folder icons showing album covers


Library Tools
Music Tools
Music
File
Home
Share
View
Manage
Play
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Select all
Select none
Invert selection
Select
Libraries
Music
Search Music
Desktop
Downloads
Recent places
Contacts
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
dell
Documents
Intel
PerfLogs
Program Files
Program Files (x86)
Users
Windows
Windows.old
DVD RW Drive (D:) OFFI
Dizzy up the Girl
Syriana [Original Soundtrack]
2 items
Library includes: 2 locations
Music
8:21 PM
7/29/2012

If you don't like the file that a folder icon shows, you can change it to a picture. Just click the Choose File button on the Customize tab and click the file you want the folder icon to show.

TIP

If you can't use a file because it's not the right type, you can take a screenshot of the open file you want to use. Save the screenshot as a JPEG file. Then use the JPEG as the folder's picture.

If you ever change your mind and want to go back to the original, click the Restore Default button in the Properties sheet.

Changing a folder's icon

You can choose an entirely different icon for a folder. You'll likely lose the open folder effect you normally see in folder icons, so you might consider changing the folder's picture rather than its icon. But if you really want to change the folder's icon to something else, just click the Change Icon button. Click the icon you want to use, or use the Browse button to browse to any location that contains icon (`.ico`) files, and choose an icon there.

If you change the icon and then change your mind, click the Change Icon button again and click Restore Default. Don't forget to click OK or Apply after changing any settings in any dialog boxes. Your changes won't take effect until you do.

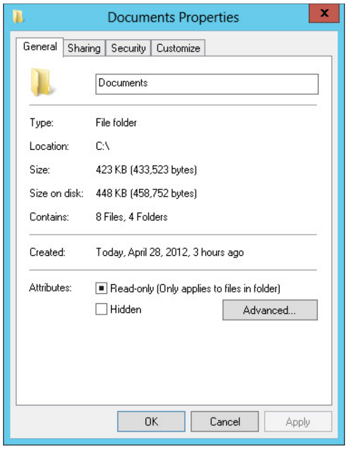
If your changes don't take effect immediately, refresh the folder. (Right-click some empty space in the folder and choose Refresh or press F5.)

Read-Only, Hidden, and Advanced attributes

When you right-click a folder icon (or file icon) and choose Properties, the General tab of the Properties dialog box shows the options shown in Figure 27.38. The Read-Only and Hidden options often confuse folks so let's take a moment to discuss what those are about.

FIGURE 27.38

General tab of a folder's Properties



Documents

Type: File folder
Location: C:\
Size: 423 KB (433,523 bytes)
Size on disk: 448 KB (458,752 bytes)
Contains: 8 Files, 4 Folders
Created: Today, April 28, 2012, 3 hours ago
Attributes: ■ Read-only (Only applies to files in folder)
☐ Hidden

The Read-Only attribute can be empty, checked, or colored. Here's the difference:

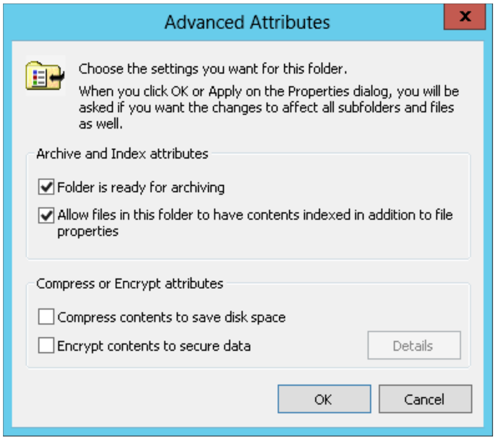
- **Empty:** The contents of the folder can be read (viewed and opened) by everyone who has access to the folder.
- **Black Square:** The contents can be read and written to (changed) by the owner of the folder (the person who created the folder). Other users with whom the folder is shared can view the contents of the folder, but not change its contents.
- **Checked:** Everyone can view the contents of the folder, but nobody (not even the owner) can change the folder's contents.

The Hidden attribute, if checked, makes the folder's icon invisible in the folder if the Do Not Show Hidden Files And Folders option in Folder Options is selected. The folder's icon is dimmed if Show Hidden Files And Folders is selected in Folder Options.

Clicking the Advanced button on the General tab reveals the options shown in Figure 27.39.

FIGURE 27.39

Advanced folder or file attributes



Advanced Attributes

Choose the settings you want for this folder.

When you click OK or Apply on the Properties dialog, you will be asked if you want the changes to affect all subfolders and files as well.

Archive and Index attributes

☑ Folder is ready for archiving

☑ Allow files in this folder to have contents indexed in addition to file properties

Compress or Encrypt attributes

☐ Compress contents to save disk space

☐ Encrypt contents to secure data

The Folder Is Ready For Archiving check box is handled automatically by Windows File History (backup feature of Windows 8). So it's unlikely you'd ever need to change that yourself. The check box is selected if you've never backed up the folder (or file) or if its contents have changed since the last backup. That tells Windows File History to back it up again the next time you do a backup. The check box is empty if its contents haven't changed since the last backup. That tells Windows File History that there's no need to back it up again.

The Allow Files In This Folder To Have Contents Indexed In Addition To File Properties check box, if selected, allows Windows to index the contents of files in the folder, as well as the file properties. For example, if the folder contains Microsoft Word documents, Windows will index the contents of those documents, enabling you to search for and locate files based on words or phrases inside the documents.

The other two options in the dialog box deserve some special attention and are described next.

Compress Contents to Save Disk Space

Choosing this option tells Windows to compress everything in the folder to reduce its disk space consumption. (This works only on hard disks that use the NTFS file system.) When you open a file from the folder, it's automatically decompressed for you. So the compression is transparent, in the sense that you don't have to constantly compress and decompress files yourself.

CAUTION

This option has nothing to do with Zip files (also called compressed folders). If your goal is to e-mail someone a Zip file, this option won't help at all. Right-click a file (or selection of files) and choose Send To – Compressed (Zipped) Folder to create a compressed file of your selected files.

Folder and file compression is a good way to conserve disk space. But before you jump in and start compressing all your folders, there are some costs to consider. For one, there is a time cost. It takes a little time to automatically compress every file you save and automatically decompress every file you open. Furthermore, many file types already have a degree of compression built into them. Putting such files into a compressed folder may have little or no effect on the amount of disk space they consume.

With today's computers, the amount of time it takes to compress and decompress a file on the fly is negligible. So, you can generally compress folders without worrying about a performance impact. However, you should generally not compress all of drive C. Instead, just compress those folders where you store lots of documents that are taking up a lot of space. If you want to turn off compression for a folder, just clear the check box beside the Compress Contents To Save Disk Space option.

Encrypt Contents to Secure Data

This check box enables you to apply Encrypting File System (EFS) to the folder. EFS encrypts the contents of the folder (or a single file) to make it almost impossible to open without logging in to the computer using the account that encrypted it. EFS is not the most complete form of encryption available for PCs, but it is nevertheless a very effective tool for securing data.

NOTE

Companies that are concerned about data being compromised when computers are stolen often use *whole-disk encryption* to encrypt the computer's entire disk drive. This encryption is applied even below the operating system level, making it nearly impossible to decrypt the contents of the computer. EFS in Windows does not provide this type of whole-disk encryption, although you can encrypt an entire disk if you want to. In reality, whole-disk encryption should really be called whole-*system* encryption when the system is encrypted below the operating system.

First, understand that anyone who has access to your user account also has access to files in your encrypted folders. Therefore, there is no point in using EFS if your user account isn't password-protected.

If you forget the password to your user account, you will lose access to all files in the encrypted folders. To play it safe, you must make a backup copy of your encryption key, preferably on a CD-R or other disk where it can't be erased. You need to store that disk in a safe place, preferably in a fireproof safe.

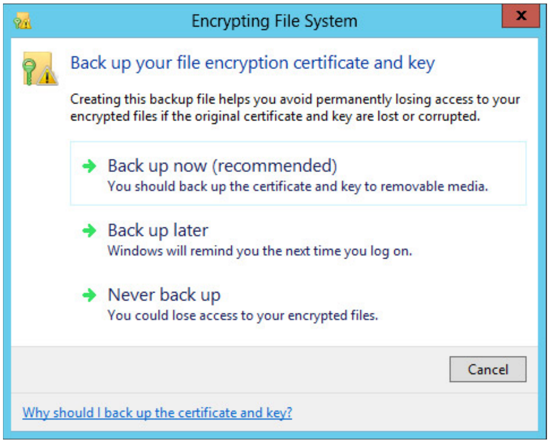
The act of encrypting a folder is easy. Just select (check) the Encrypt Contents To Secure Data check box. Then follow the steps in the wizard that appears to make a backup copy of your encryption key (see Figure 27.40). If you save that file to your hard disk, copy it to a CD-R or other medium, and delete the copy that's on your hard disk.

NOTE

An encryption key applies to all encrypted folders in your user account so you'll only be prompted to back up your key the first time you encrypt a folder.

FIGURE 27.40

Make a backup copy of your encryption key



Encrypting File System

Back up your file encryption certificate and key

Creating this backup file helps you avoid permanently losing access to your encrypted files if the original certificate and key are lost or corrupted.

Back up now (recommended)
You should back up the certificate and key to removable media.

Back up later
Windows will remind you the next time you log on.

Never back up
You could lose access to your encrypted files.

Once you've encrypted a folder, you really don't have to do anything else to secure its contents. When you save a file to that folder, or move a file into that folder, its contents are encrypted automatically. When you open a file, the contents are decrypted. So working with the files in the encrypted folder is like working with any other files in any other folder.

If someone tries to open a file in the encrypted folder from another user account, he will be denied access to the file. There is no way he can access anything in the folder unless he can get a copy of your encryption key.

NOTE

For more information on encryption and backing up keys, search Windows Help for **EFS** or **certificate backup**.

After all this talk of creating folders, you may be wondering how to get some of your existing files into one. That's a topic for the next chapter. First, here's a quick recap of the important points from this chapter.

Wrap-Up

This chapter covered some basic facts about how computers store information. It also covered some basic (and some not-so-basic) skills for navigating through your system to find things. Here's a quick review:

- Everything that's in your computer is stored on your hard disk, typically drive C.
- The Computer folder shows icons for all the disk drives in your system. To open that folder, click the Start button and choose Computer.
- A folder is a container in which files (and perhaps subfolders) are stored.
- Icons that represent folders usually look like little manila file folders. Double-click a folder's icon to open the folder and see what's inside.
- File Explorer (also called Explorer) is the program you use to navigate through and explore the contents of all the drives and folders in your system.
- Explorer's ribbon bar, Address bar, Navigation pane, and main contents window are all tools for navigating through drives and folders in your system.
- When saving a file, always navigate to an appropriate folder and provide a meaningful filename before you click Save. Otherwise, it may be difficult to find the file later when you need it.
- You can create your own folders from the Organize button in Explorer or from the Save dialog box.
- To customize a folder, right-click its icon and choose Customize.

CHAPTER 28

Managing Files and Folders

IN THIS CHAPTER

- **Selecting items to move, copy, rename, or delete**
- **Moving and copying files and folders**
- **Renaming files and folders**
- **Creating shortcuts to favorite places**
- **Deleting and un-deleting files and folders**

Your computer's hard disk has enough space on it to store thousands of pictures, songs, and other files. Having lots of stuff on your computer can be a good thing, but only if you can find what you're looking for when you need it. Therefore, keeping things organized so they're easy to find is an important basic skill that every computer user needs to learn.

Chapter 27 discussed drives, folders, and files in terms of what they are and why you need them. You also learned how to use Explorer to navigate your system and get to things you need. The chapter also covered strategies for saving things in such a way that prevents you from losing them.

This chapter picks up where that one left off. Here, we assume you've read and understood most of that chapter. Now you're ready to start reorganizing what you already have. That requires that you know how to select, move, and copy files. You'll also discover other important techniques in this chapter, such as how to rename, delete, and un-delete files. These basic skills are important to acquire if you ever intend to use your computer for anything beyond basic e-mail and web browsing.

Selecting Icons

You will often find that you want to perform some operation on many files. For example, let's say you want to copy a couple dozen files to an external disk. You could do them one at a time, but that would take a lot of time and effort. It would be better and easier to *select* all the icons you want to copy, and copy them all in one fell swoop.

As you'll see, you can select icons in many ways. As always, there is no right way or wrong way, no good way or bad way. It's usually a matter of choosing the method that is easiest for you, or is best for whatever you're trying to accomplish.

NOTE

How you select icons depends largely on whether you're using the double-click or single-click method to open icons. If you don't know what that's about, see "To Click or Double-Click?" in Chapter 27.

Thumbnails for pictures and videos are icons, too. So all the techniques described in this chapter apply to thumbnails.

Selecting one icon

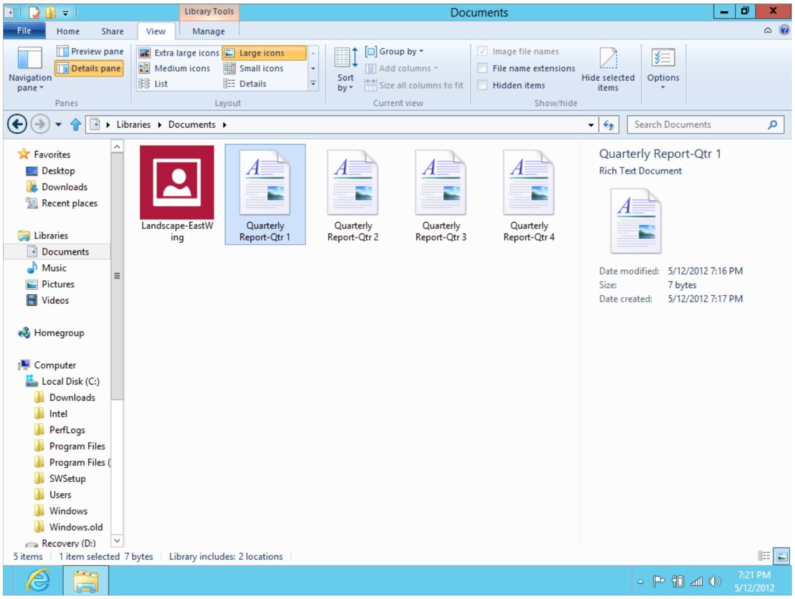
Selecting a single icon is easy. If you're using the double-click method to open documents or programs, you click (once) on the icon you want to select. If you're using the single-click method to open icons, you just point to the icon (rest the tip of the mouse pointer right on the icon you want to select). The selected icon will be highlighted to stand out from the others. The toolbar will likely change to reflect things you can do with that selected icon. If the Details pane is open, it will show information about the selected icon, as illustrated in Figure 28.1.

TIP

If you're new to selecting multiple icons, you might find it easiest in Windows 8 to use the check box feature to select icons.

FIGURE 28.1

Sample selected icon

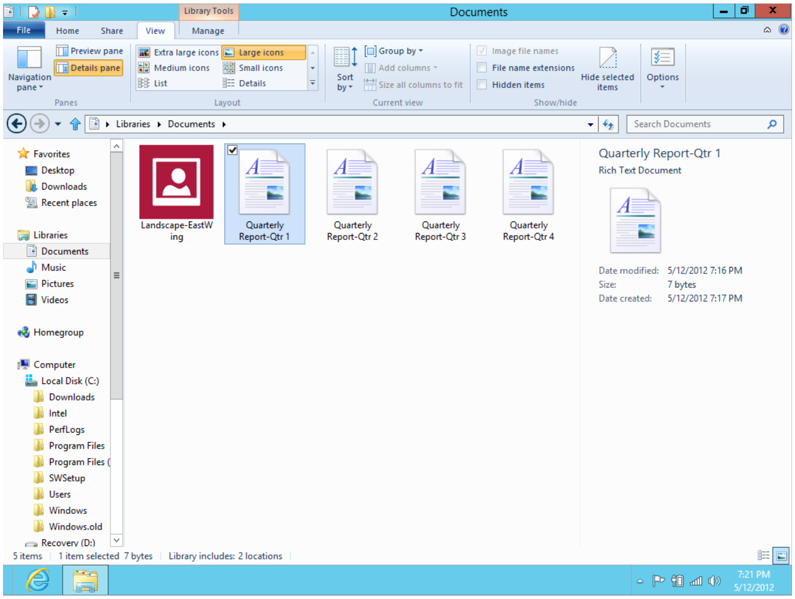

Library Tools
Documents
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Libraries
Documents
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Downloads
Intel
PerfLogs
Program Files
Program Files (
SWSetup
Users
Windows
Windows.old
Recovery (D:)
Landscape-EastWing
Quarterly Report-Qtr 1
Quarterly Report-Qtr 2
Quarterly Report-Qtr 3
Quarterly Report-Qtr 4
Quarterly Report-Qtr 1
Rich Text Document
5 items
1 item selected 7 bytes
Library includes: 2 locations
7:21 PM
5/12/2012

Date modified: 5/12/2012 7:16 PM
Size: 7 bytes
Date created: 5/12/2012 7:17 PM

If you turned on the option to select icons using check boxes in Folder Options, you have to point to the icon first and then click its check box. The only thing that's unique about this method is that the selected icon's check box has a checkmark, as in Figure 28.2.

FIGURE 28.2

Selected icon shows a checkmark


Quarterly Report-Qtr 1
Rich Text Document
Date modified: 5/12/2012 7:16 PM
Size: 7 bytes
Date created: 5/12/2012 7:17 PM

5 items | 1 item selected 7 bytes | Library includes: 2 locations

Library Tools
Documents
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Item check boxes
File name extensions
Hidden items
Hide selected items
Options
Show/hide
Libraries ▸ Documents ▸
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Downloads
Intel
PerfLogs
Program Files
Program Files (
SWSetup
Users
Windows
Windows.old
Recovery (D:)
Landscape-EastWing
Quarterly Report-Qtr 1
Quarterly Report-Qtr 2
Quarterly Report-Qtr 3
Quarterly Report-Qtr 4
7:21 PM
5/12/2012

To turn on the option to use check boxes, click the View tab and choose Options. Click the View tab in the dialog box that opens. Then scroll down to and check Use Check Boxes To Select Items. Click OK. The check box won't show on an icon until you point to or click the icon. See Chapter 27 for more information on folder options.

TIP

If you unintentionally keep opening files when you only intended to select their icons, consider using the double-click method to open icons.

Selecting all icons

If you want to select all the icons in a folder, use whichever of the following techniques is easiest for you:

- Click the Home tab and click Select All.
- Press Ctrl+A.

All of the icons are selected.

Selecting a range of icons

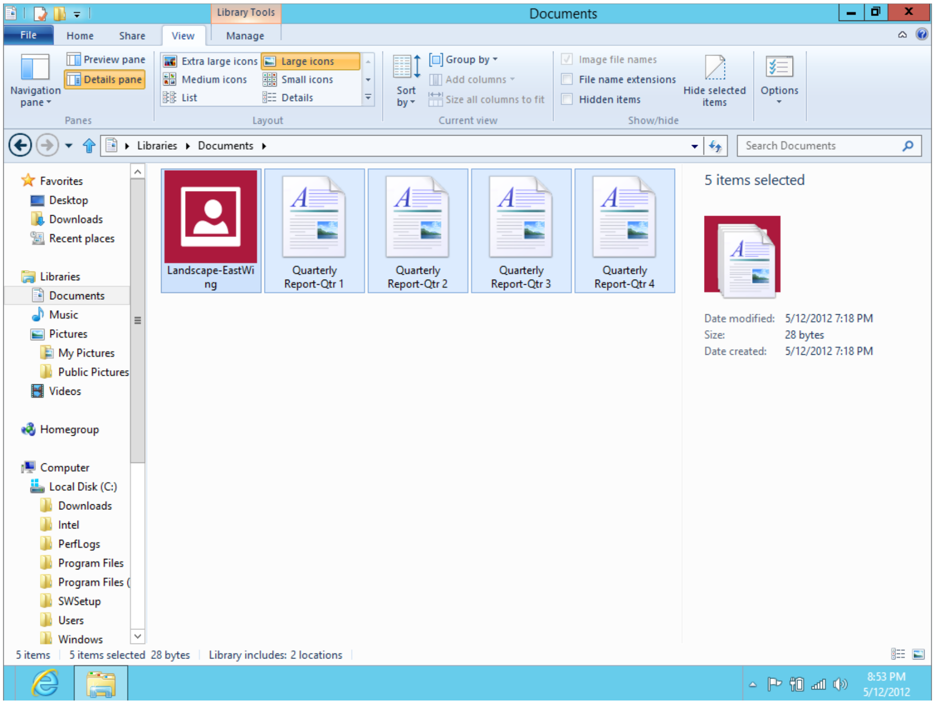
You can easily select a range of icons using the mouse and keyboard. If there are many icons in the folder, you might consider using the Layout buttons on the View tab (or the Ctrl key and your mouse wheel) to make the icons small enough so you can see all the icons you want to select. If the items you want to select have something in common, consider sorting the icons so the ones you want to select are adjacent to one another. To select multiple icons:

1. Select the first one by pointing or clicking.
2. Hold down the Shift key and click the last one.

Both icons and all the icons in between are selected. The toolbar changes to show things you can do with all of those icons. If the Details pane is open, it shows some information about the selected icons. The Size detail tells the combined size of all the selected icons. Figure 28.3 shows an example when you do not have any folders selected.

FIGURE 28.3

Range of icons selected


Library Tools
Documents
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Libraries
Documents
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
My Pictures
Public Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Downloads
Intel
PerfLogs
Program Files
Program Files (
SWSetup
Users
Windows
Landscape-EastWing
Quarterly Report-Qtr 1
Quarterly Report-Qtr 2
Quarterly Report-Qtr 3
Quarterly Report-Qtr 4
8:53 PM
5/12/2012

5 items selected

Date modified: 5/12/2012 7:18 PM
Size: 28 bytes
Date created: 5/12/2012 7:18 PM

5 items | 5 items selected 28 bytes | Library includes: 2 locations

Selecting and unselecting one at a time

To select a single icon without unselecting others, Ctrl+click the icons you want to select (or unselect). Ctrl+click means hold down the Ctrl key as you click. For example, if you wanted to unselect only the Landscape-EastWing icon in Figure 28.3, you'd Ctrl+click its icon. All the other icons would remain selected.

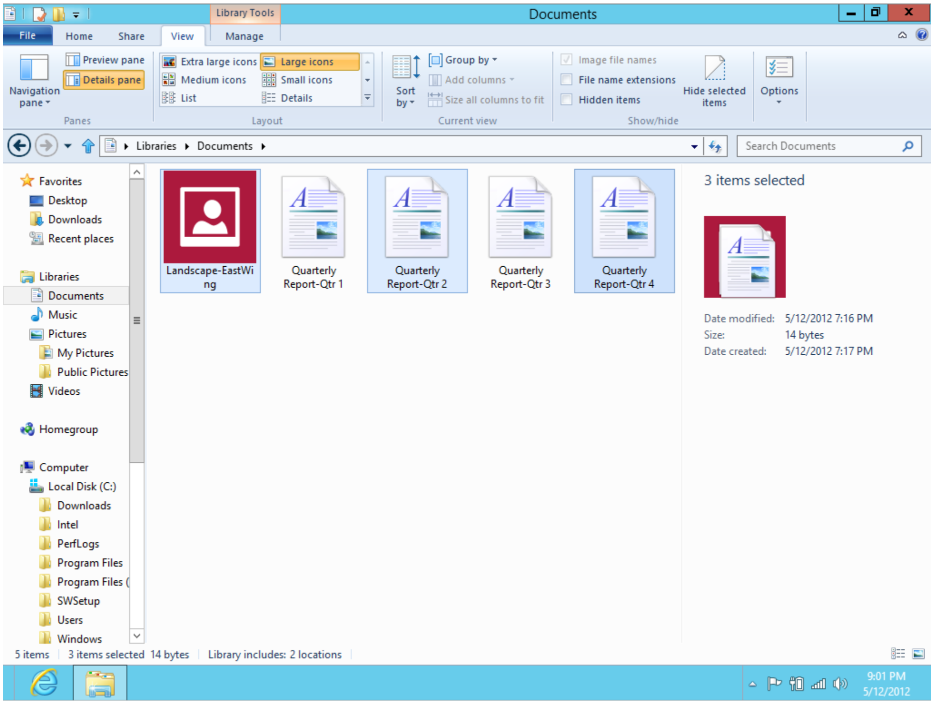
If you're using the single-click method to open icons, you can Ctrl+click or Ctrl+point to select or unselect a single icon. It doesn't matter which; the result is the same.

Here's another way to look at it. When you select an icon by pointing or clicking, only that one icon is selected. Any other selected icons are instantly deselected. But if you hold down the Ctrl key as you go, other selected icons remain unchanged. So you can hold down the Ctrl key to select or unselect without disturbing other selected icons.

Of course you can use the Ctrl key to select multiple non-adjacent icons, as illustrated in Figure 28.4.

FIGURE 28.4

Select multiple icons


Library Tools
Documents
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Item check boxes
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Libraries
Documents
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
My Pictures
Public Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Downloads
Intel
PerfLogs
Program Files
Program Files (
SWSetup
Users
Windows
Landscape-EastWing
Quarterly Report-Qtr 1
Quarterly Report-Qtr 2
Quarterly Report-Qtr 3
Quarterly Report-Qtr 4
9:01 PM
5/12/2012

3 items selected

Date modified: 5/12/2012 7:16 PM
Size: 14 bytes
Date created: 5/12/2012 7:17 PM

5 items | 3 items selected 14 bytes | Library includes: 2 locations

Selecting with a touch screen

Windows 8 is designed for mobile devices such as mobile phones and tablets. Another way to select onscreen files is to touch the files using your finger (as long as your screen is a touch screen). To select multiple files with touch, touch each file you want to select. To unselect a file in a group of selected ones, simply re-touch that file.

There are a handful of touch-based gestures you'll use with Windows 8, along with mouse-based alternatives for use on non-touch devices (or for when you have a mouse connected to a touch device). Chapter 2 discusses these gestures in more detail. In addition, see Appendix D for a list of common Windows 8 interface gestures.

Selecting with the keyboard

You can select icons without using the mouse at all. First, you have to make sure the keyboard focus is in Explorer's main contents pane. If you're not sure, press the arrow keys on the keyboard until you notice the selection box moving from icon to icon within the main content pane. Then move the focus to the first icon you want to select using the navigation keys (←, →, ↑, ↓, Home, End, PgUp, and PgDn).

To select multiple adjacent icons, hold down the Shift key as you move through icons using the navigation keys. All icons through which you pass are selected. To select multiple non-adjacent icons, hold down the Ctrl key as you move from icon to icon with the navigation keys. When you get to an icon you want to select, tap the Spacebar (but don't let go of the Ctrl key). To unselect all selected icons with the keyboard, press any navigation key alone, without holding down Shift or Ctrl.

Selecting by filtering

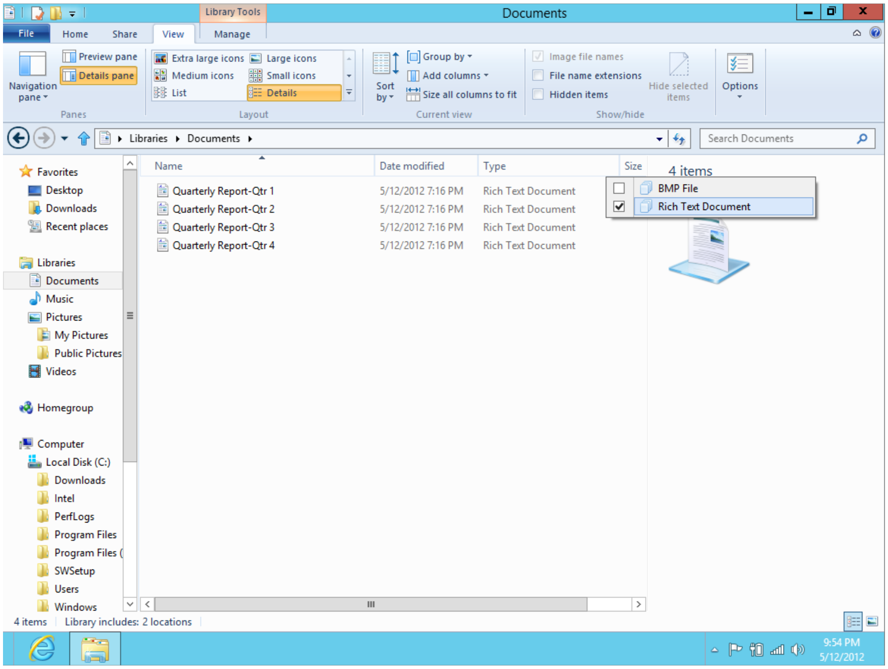
Yet another way to select icons that have something in common is to filter out (hide) the icons you don't want to select. For example, let's say you want to select only files that were created or edited today. On the View tab, choose the Details Layout option. Click the arrow next to the Date Modified column heading and choose the Today option. Or, perhaps you want to select only Rich Text Document files, as in Figure 28.5. In that case, use the Type column to filter the view.

TIP

Don't forget that if you don't see a column heading you need, you can click the >> symbol at the end of the column headings to see other open columns. Or right-click any column heading to see other columns you can choose. Note that the >> symbol only appears when the window is not wide enough to show all columns.

FIGURE 28.5

Hide all except Rich Text Document files


Library Tools
Documents
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Options
Show/hide
Libraries
Documents
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
My Pictures
Public Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Downloads
Intel
PerfLogs
Program Files
Program Files (
SWSetup
Users
Windows
4 items
Library includes: 2 locations
9:54 PM
5/12/2012

Name	Date modified	Type	Size
Quarterly Report-Qtr 1	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 2	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 3	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 4	5/12/2012 7:16 PM	Rich Text Document	

☐ BMP File
☑ Rich Text Document

4 items

You also can filter by using the Search box at the top of the folder. Just be aware that the search results might include files from subfolders. It all depends on your selection choice in Folder And Search Options, as discussed in Chapter 27. But for the sake of example, let's say you want to select all PNG and GIF images in a folder. You could type the following into the Search box for the folder:

type:gif OR type:png

Or the following:

***.gif OR *.png**

Just make sure you use an uppercase **`OR`** to separate the two types. The search results include only files with `.gif` and `.png` extensions.

CAUTION

Using **`AND`** in the preceding examples wouldn't work because no file can have both a `.gif` extension AND a `.png` extension. Be sure to read Chapters 29 and 30 for a full understanding of how index searches work because it's not always intuitively obvious.

When only the icons you want to select remain visible, select them all using any technique described earlier (for example, press Ctrl+A). None of the hidden icons will be selected so you can move, copy, delete, or rename the selected icons without affecting anything else.

Selecting by lassoing

You can also select multiple icons by dragging the mouse pointer or your finger (on a touch screen device) through them. But this is more difficult to do in Windows 8 than in older versions of Windows. The problem is that if you want to select by lassoing, you have to get the mouse pointer to some empty spot near the first icon you want to select, without selecting any icons. That's difficult in Windows 8 because there is little or no empty space between icons. What appears to be empty space isn't empty at all.

You can see this if you use the single-click method to open icons. Once you get the mouse pointer anywhere near an icon, you select the icon. Once you've selected an icon, if you start dragging, you only move the icon; you don't select multiple icons. The mouse pointer has to be in neutral territory (not on an icon) *before* you start dragging.

To see where the empty space is in the current view, press Ctrl+A to select icons. If there's any empty space at all, it will be white. To select by dragging, you have to get the tip of the mouse pointer into a white area near the first icon you want to select. Then hold down the left mouse button and drag through all the icons you want to select.

Selecting most icons in a folder

The old "invert selection" technique from previous versions of Windows still works, too. But the option is available only from the Home tab. As the name implies, the Invert Selection option unselects all selected icons and selects the ones that weren't selected. Say, for example, you want to select most, but not all, of the icons in a folder. You could start by selecting the few icons you *don't* want to select. Then choose the Home tab and click the Invert Selection option.

Selecting from multiple folders

To select icons from multiple folders, perform a search that finds all the icons you want to select. In the search results, you can select all icons, or just specific icons using any of the preceding methods. For more information on performing searches, see Chapters 29 and 30.

Unselecting all icons

If you have one or more icons selected and want to unselect them all, click some neutral area to the right of, below, or between icons (if you can find such an area). Or click the Refresh button (the two arrows to the right of the Address bar).

Moving and Copying Files

Many reasons exist for moving and copying files. If you've been saving files in a willy-nilly manner, you may want to move them around into folders that make more sense so they're easier to find. Or, if you end up with hundreds or thousands of files in a folder and you get sick of looking through all their names, you might want to create some subfolders and then move some of those files into subfolders.

If you have a bunch of files on external disks, you may want to copy them to your hard disk where they're easier to get to and work with. Or, if you need to send files to someone whose e-mail account has file-size limits, you might want to copy some files to an external disk to put in the mail. Then again, you may want to copy some files to an external disk as a backup, just in case some mishap damages the copy on your hard disk.

Whatever your reason for moving or copying files, the techniques are the same. First, understand that there is a difference between moving and copying. The words mean the same things they do in English. When you move a file from one place to another, you still have only one instance of the file. It's just in the new location rather than the old location. When you copy a file, you end up with two instances: the original in the original location and an exact copy in the new location.

Moving and copying usually involves two locations. These locations may be two different folders in the same drive, or two entirely different drives. But that doesn't really matter because one location is always the *source*. The other location is the *target* or *destination*. Here's the difference:

- **Source:** The drive and/or folder that contains the files you want to move or copy (the "*from*" drive and/or folder).
- **Destination or target:** The drive and/or folder to which you want to move or copy files (the "*to*" drive and/or folder).

The source can be any folder on your hard disk, a flash drive, a memory card, an external device (such as a digital video camera), or a DVD. The same is true for the destination in most cases, although copying files to CDs and DVDs requires methods that are different from those described in this chapter.

Moving files to a subfolder

One of the most common reasons to move files is that you have created a new, empty subfolder within some existing folder and want to move some files into that new subfolder. That's easy to do:

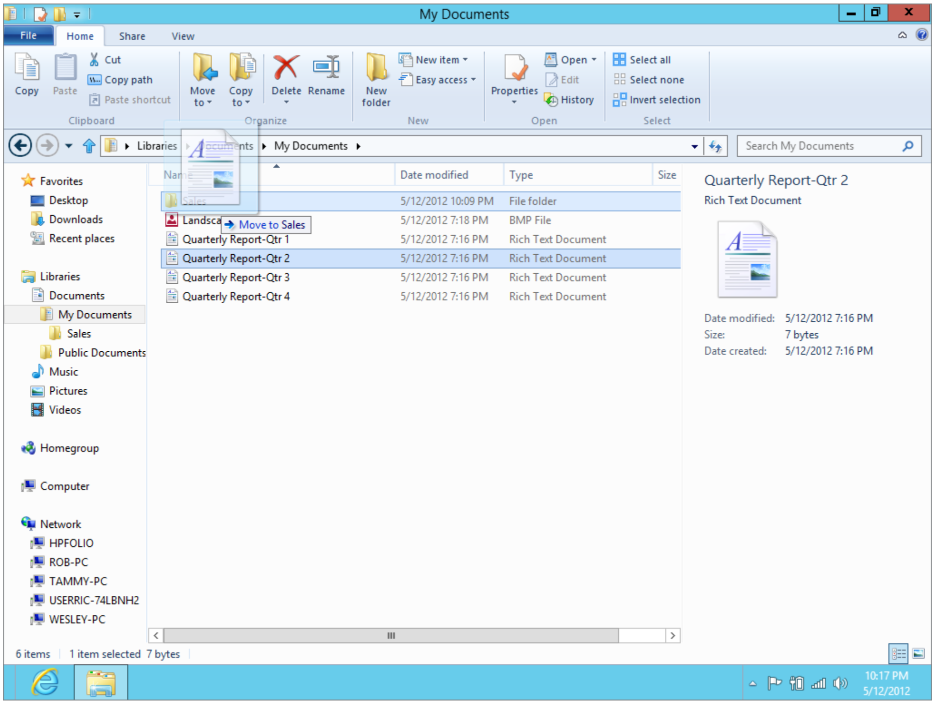
- Drag any item onto the subfolder's icon, and release the mouse button.

- Or, select the items you want to move and drag any one of the selected items to the subfolder's icon; then release the mouse button.
- For touchscreens, press and hold down on the file's icon and drag the file to its new location. Lift your finger off the screen when the file reaches the new destination.

The main trick is to make sure that you get the mouse pointer or your finger on the subfolder's icon. When the mouse pointer is right on the subfolder's icon, you'll see the words "Move to *foldername*" at the mouse pointer (where *foldername* is the name of the folder into which you're moving the file). For example, in Figure 28.6 we're about to drop a selected icon into a subfolder named Sales. To drop the files into the folder, release the mouse button without moving the mouse pointer away from that folder.

FIGURE 28.6

About to drop selected icons onto a subfolder's icon


My Documents
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Libraries
Documents
My Documents
Search My Documents
Name
Date modified
Type
Size
Move to Sales
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
My Documents
Sales
Public Documents
Music
Pictures
Videos
Homegroup
Computer
Network
HPFOLIO
ROB-PC
TAMMY-PC
USERRIC-74LBNH2
WESLEY-PC
10:17 PM
5/12/2012

Name	Date modified	Type	Size
Sales	5/12/2012 10:09 PM	File folder	
Landsca	5/12/2012 7:18 PM	BMP File	
Quarterly Report-Qtr 1	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 2	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 3	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 4	5/12/2012 7:16 PM	Rich Text Document	

Quarterly Report-Qtr 2
Rich Text Document
Date modified: 5/12/2012 7:16 PM
Size: 7 bytes
Date created: 5/12/2012 7:16 PM

6 items | 1 item selected 7 bytes

If you change your mind partway through the drag-and-drop operation, just tap the Esc key and then release the mouse button. If it's too late for that because you've already dropped the items, press Ctrl+Z to undo the move.

If you want to copy, rather than move, the files to a subfolder, drag with the right mouse button. After you drop the file, click Copy Here on the menu that appears. Optionally, you can drag with the left mouse button, but you have to press and hold down the Ctrl key before you release the mouse button.

CAUTION

Make sure you don't select the subfolder into which you want to move or copy the items. It won't work if you do it that way. Select only the items you want to move or copy into the subfolder.

Copying to/from external disks

You can copy things to external disks in many ways. But don't forget that size is limited on those. And the rules for copying to CDs and DVDs are different from those described here. You'll want to refer to Windows Help if you plan on copying files to a CD or DVD.

Anyway, you first have to know how much space you have on the external disk, which means you have to put the disc into its drive and open your Computer folder. When you view icons in the Computer folder as Tiles, each drive's available space shows with its icon. Or if you can see the drive's icon in the Folders list, right-click that and choose Properties. In the Properties sheet that opens, the Free Space number tells you how much room you have.

Then, you need to know how much space the file(s) you're about to copy will require. For that, you can select the icons you intend to copy. If the Details pane is open, you'll see their combined size next to the Size option. But that size isn't entirely accurate because it doesn't take into account the small amount of additional overhead involved in storing files on disk. For a more accurate size, right-click any selected icon and choose Properties. The Size On Disk number in the Properties sheet more accurately describes how much disk space you'll need to store all of the selected files. If there isn't enough space on the external disk, you'll need to select and copy fewer files.

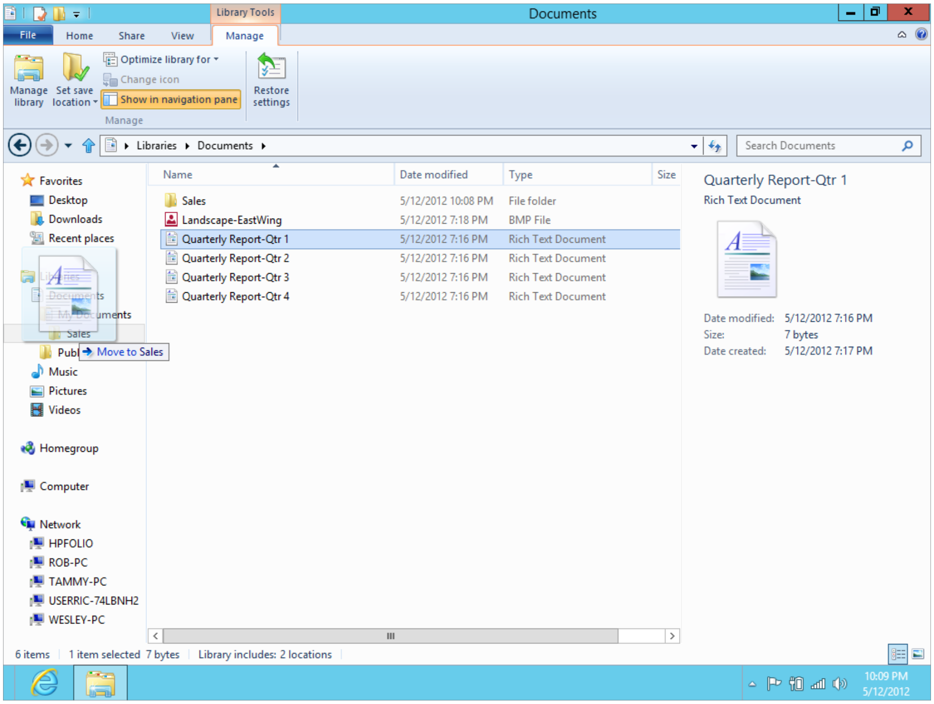
Once you know the files will fit, you can use any of the techniques in the sections that follow to copy files to the external disk, or for that matter, to copy files from an external disk or portable device (camera or music player) to your hard disk.

Moving and copying by dragging

You can move or copy any file (or selected files) to any location whose name you can see in the Navigation pane. You can also create a shortcut to the file. As usual, if you want to move or copy multiple items, first select their icons. Then just drag any one of them to the appropriate location in the Navigation pane, as illustrated in Figure 28.7. That location can be any folder or any drive.

FIGURE 28.7

Drag icons to any drive or folder in the Navigation pane


Library Tools
Documents
File
Home
Share
View
Manage
Manage library
Set save location
Optimize library for
Change icon
Show in navigation pane
Restore settings
Manage
Libraries
Documents
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
My Documents
Sales
Public
Move to Sales
Music
Pictures
Videos
Homegroup
Computer
Network
HPFOLIO
ROB-PC
TAMMY-PC
USERRIC-74LBNH2
WESLEY-PC
10:09 PM
5/12/2012

Name	Date modified	Type	Size
Sales	5/12/2012 10:08 PM	File folder	
Landscape-EastWing	5/12/2012 7:18 PM	BMP File	
Quarterly Report-Qtr 1	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 2	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 3	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 4	5/12/2012 7:16 PM	Rich Text Document	

Quarterly Report-Qtr 1
Rich Text Document
Date modified: 5/12/2012 7:16 PM
Size: 7 bytes
Date created: 5/12/2012 7:17 PM

6 items | 1 item selected 7 bytes | Library includes: 2 locations

When dragging, make sure you get the tip of the mouse pointer right on the name of the drive or folder to which you want to copy. If you drag with the left mouse button, you'll see Move to or Copy To when the mouse pointer is in position. The rule is:

- If you drag to a different drive, including an external drive or a network drive, Windows assumes you want to copy.
- If you drag to another folder on the same drive, Windows assumes you want to move.

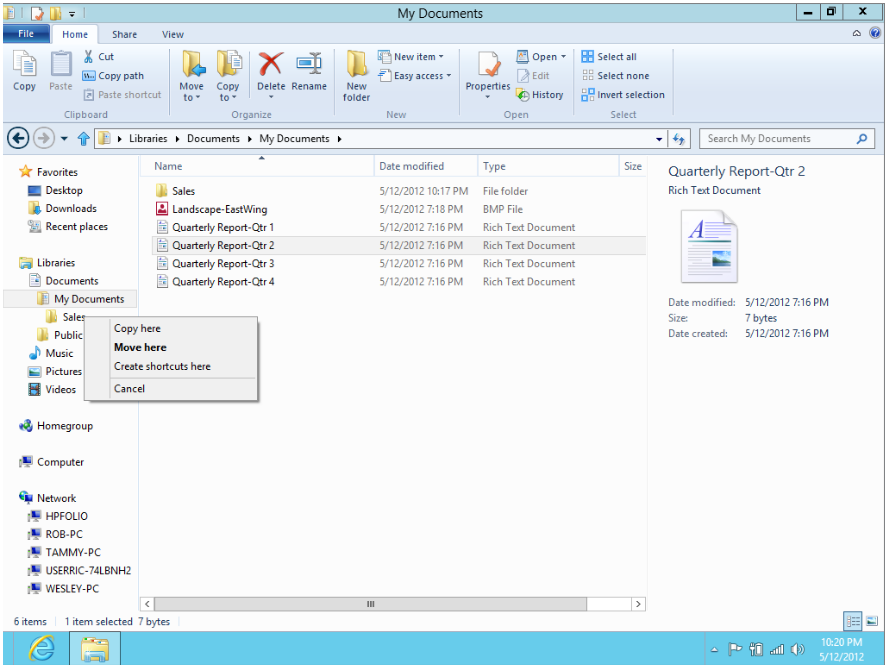
There's rarely any need to move a file to an external disk. External disks are mainly used for copies of files on your hard disk. Likewise, there's rarely any need to have two copies of the same file on your hard drive. But you're not stuck letting Windows 8 decide whether to move or copy. Just press and hold down Alt, Shift, or Ctrl before you release the mouse button to drop the files. That rule is:

- **Ctrl:** Files will be copied to the location.
- **Shift:** Files will be moved to the location.
- **Alt:** A shortcut to the file will be created.

As an alternative to relying on the keys, you can drag with the right mouse button instead of the left. When you release the mouse button to drop, you'll see a menu like the one in Figure 28.8. Click Move or Copy depending on what you want to do. Click Cancel if you change your mind and decide to do neither.

FIGURE 28.8

Menu when you right-drag and then drop


My Documents
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Libraries ▸ Documents ▸ My Documents ▸
Search My Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
My Documents
Sales
Public
Music
Pictures
Videos
Homegroup
Computer
Network
HPFOLIO
ROB-PC
TAMMY-PC
USERRIC-74LBNH2
WESLEY-PC
Copy here
Move here
Create shortcuts here
Cancel
10:20 PM
5/12/2012

Name	Date modified	Type	Size
Sales	5/12/2012 10:17 PM	File folder	
Landscape-EastWing	5/12/2012 7:18 PM	BMP File	
Quarterly Report-Qtr 1	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 2	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 3	5/12/2012 7:16 PM	Rich Text Document	
Quarterly Report-Qtr 4	5/12/2012 7:16 PM	Rich Text Document	

Quarterly Report-Qtr 2
Rich Text Document

Date modified: 5/12/2012 7:16 PM
Size: 7 bytes
Date created: 5/12/2012 7:16 PM

6 items | 1 item selected 7 bytes

Moving or copying by using two open folders

It's not always easy getting the tip of the mouse pointer right on the destination drive or folder in the Navigation pane. You might find it easier to open both the source and destination locations at the same time. Then just drag from one open window to the other. Windows make much bigger targets.

The trick here is to open two instances of Explorer, one for the source and one for the destination. Then size and position so you can see at least some portion of both. For example, in Figure 28.9, the left window is a folder on the hard drive. The right window is a jump drive.

1. Open the source folder or drive (from which you want to move/copy files).
2. Right-click the File Explorer icon on the taskbar and choose File Explorer. This starts a second instance of a File Explorer window.

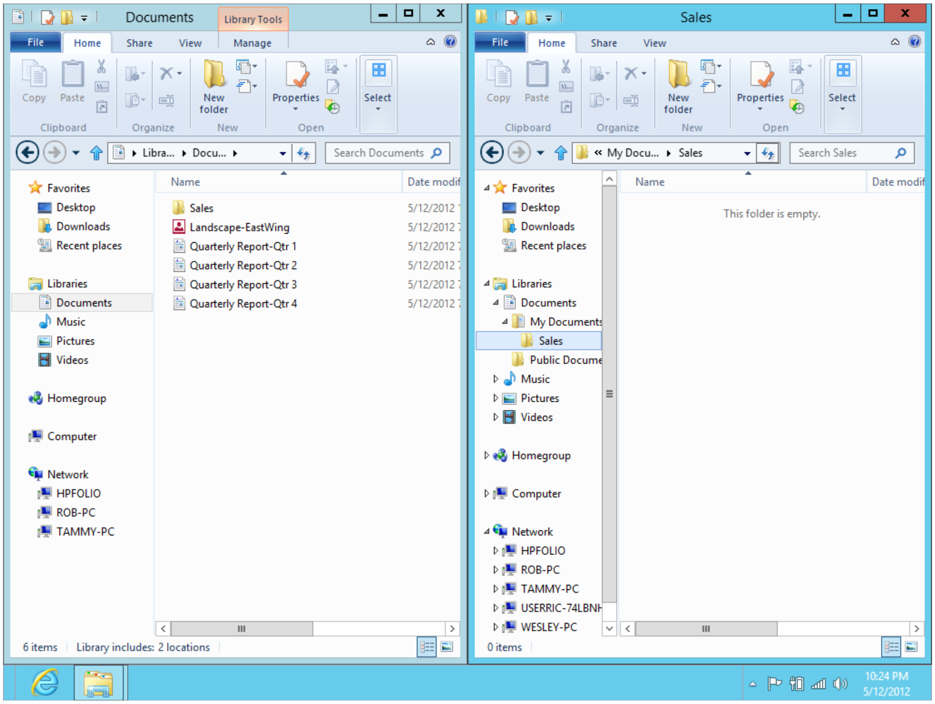
3. In the second Explorer window, navigate to the destination drive or folder.
4. Right-click the clock in the lower-right corner of the screen and choose Show Windows Side by Side, or simply size and position the windows to suit your needs, as shown in Figure 28.9.

TIP

File Explorer is the program that displays folders. You can use all the techniques described in Chapter 4 to move and size the File Explorer window.

FIGURE 28.9

Drag icons from one folder to the other



Documents
Library Tools
File
Home
Share
View
Manage
Copy
Paste
New folder
Properties
Select
Clipboard
Organize
New
Open
Libra...
Docu...
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Network
HPFOLIO
ROB-PC
TAMMY-PC
Name
Date modif
Sales
Landscape-EastWing
Quarterly Report-Qtr 1
Quarterly Report-Qtr 2
Quarterly Report-Qtr 3
Quarterly Report-Qtr 4
5/12/2012
6 items
Library includes: 2 locations
Sales
My Docu...
Sales
Search Sales
My Documents
Public Docume
USERRIC-74LBNH
WESLEY-PC
This folder is empty.
0 items
10:24 PM
5/12/2012

That gets you to the point where you can see both open folders. Now you just have to select the items you want to move or copy. Then drag them into the main center pane of the destination folder and drop them there. Or, right-drag the items so you can choose Move or Copy after you release the mouse button.

CAUTION

Don't drag to the Navigation pane in the destination window. Either close the Navigation pane in the destination location's window, or make sure you drag past it into the main center pane of that window.

Using cut-and-paste to move or copy files

You can also copy-and-paste files to copy them, or cut-and-paste to move files. The procedure goes like this:

1. Navigate to the drive or folder that contains the items you want to move or copy.
2. To move or copy multiple items, select their icons. Then:
   - To move the items, right-click its icon or any selected item and choose Cut or press Ctrl+X.
   - To copy the itemss, right-click its icon or any selected icon and choose Copy or press Ctrl+C.
3. Navigate to the destination drive or folder.
4. Paste using any of the following methods:
   - Click the Organize button and choose Paste.
   - Press Ctrl+V.
   - Right-click some empty space in the main, center pane of the destination window and choose Paste.

Making a copy in the same folder

You may want to make a copy of a file within the same folder. For example, maybe you have a large photo from your digital camera. You want to make a smaller version for e-mail or for use in documents. Of course, you don't want to shrink down your original because that's the best one to use for editing and printing. Here's the quick and easy way to make copies:

1. Select the icon (or icons) you want to copy.
2. Press Ctrl+C and then press Ctrl+V (to copy, then paste).

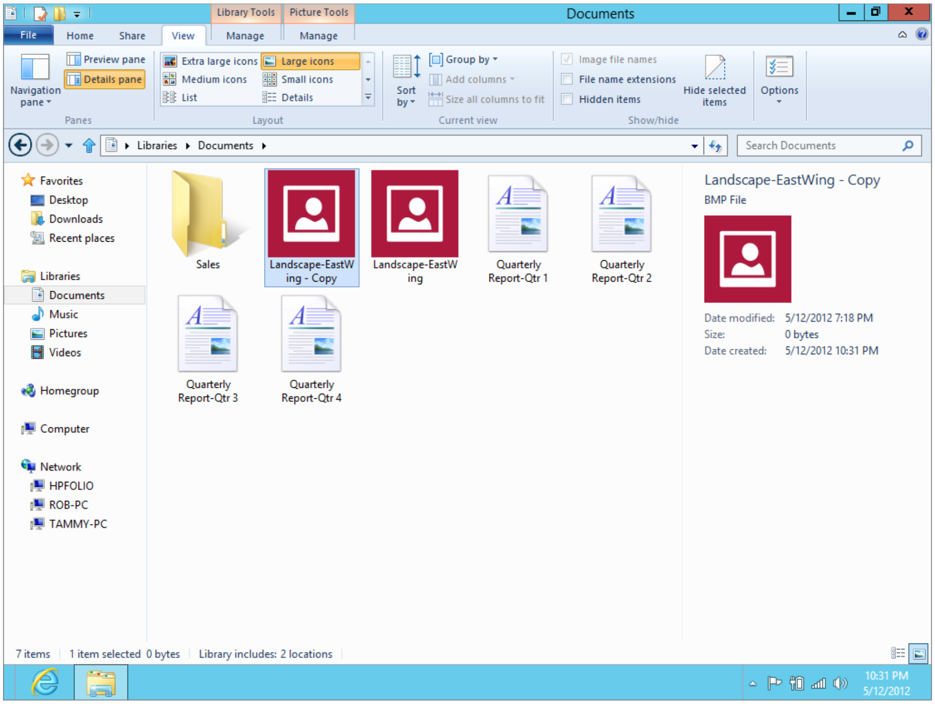
The copied files have the same name as the originals followed by – `Copy`, as in Figure 28.10. You can rename the copies if you like, but it isn't necessary. You can make any changes you want to the copies. Those changes will have no effect on the originals.

TIP

Click the Name column heading once or twice to get the files back into alphanumeric order, if needed.

FIGURE 28.10

Original files and copies


Library Tools
Picture Tools
Documents
File
Home
Share
View
Manage
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Libraries
Documents
Search Documents
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Network
HPFOLIO
ROB-PC
TAMMY-PC
Sales
Landscape-EastWing - Copy
Landscape-EastWing
Quarterly Report-Qtr 1
Quarterly Report-Qtr 2
Quarterly Report-Qtr 3
Quarterly Report-Qtr 4
Landscape-EastWing - Copy
BMP File
7 items
1 item selected 0 bytes
Library includes: 2 locations
10:31 PM
5/12/2012

Date modified: 5/12/2012 7:18 PM
Size: 0 bytes
Date created: 5/12/2012 10:31 PM

Undoing a move or copy

If you complete a move or copy operation and then change your mind, you can undo the action. But you have to do it soon because you can only undo your most recent action. For example, you can't move or copy, then do a bunch of other things, and then come back and undo the move or copy. Use whichever technique is easiest for you to undo a move/copy:

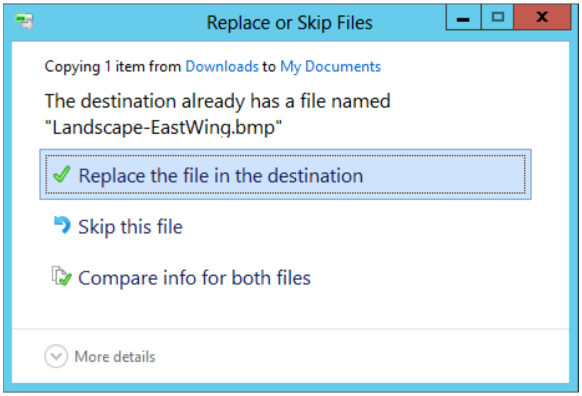
- Press Ctrl+Z.
- Click the down arrow on the Quick Access toolbar (which is on the File Explorer title bar) and choose Undo.
- Right-click some empty white space in the main pane of either folder and choose Undo Move or Undo Copy.

This location already contains ...

A folder cannot contain two files that have the same name. If you move or copy a file into a folder (or onto a drive) and that destination already has a file with the same name as the one you're bringing in, you'll see a message similar to the one in Figure 28.11. In this example, we are copying a file. Notice that the message simply explains what's going on and gives you some choices as to what you can do about it.

FIGURE 28.11

Destination already has file with that name



Copying 1 item from Downloads to My Documents

The destination already has a file named "Landscape-EastWing.bmp"

Replace the file in the destination
Skip this file
Compare info for both files
More details

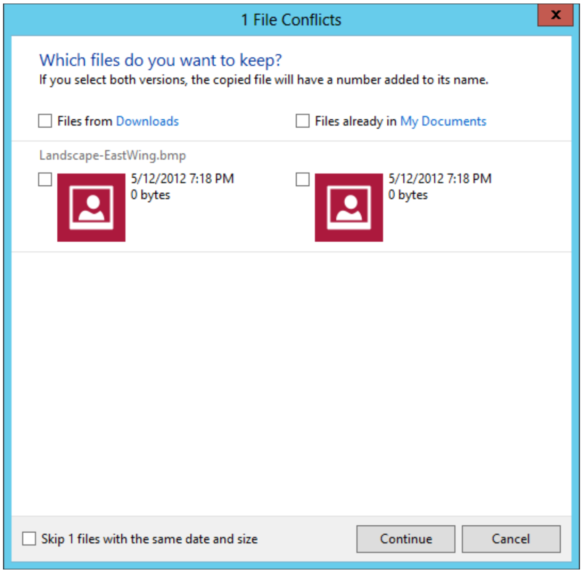
Before you make a decision, take a look at the source you're copying from and the destination to which you're copying. That information appears at the top of the Replace Or Skip Files dialog box (Downloads and My Documents in Figure 28.11). If that isn't where you intended to copy from and to, click the Close button to cancel the whole operation. Then rethink where you want to move/copy from and to, and start over. But this time, make sure you get both locations right.

If the source and destination are correct, then think what you want to do about the copy that's already in the destination. The following options are available in the Windows 8 Replace Or Skip Files dialog box:

- If you want to replace the file at the destination with the one you're moving or copying, click the first option, Replace The File In The Destination Folder.
- If you want to keep the file that's already at the destination and leave well enough alone, click Skip This File. The move/copy operation will be cancelled and it will be just as though you never even tried to move or copy.
- If you want to compare file information for both file click the third Option — Choose Compare Info For Both Files. This displays the File Conflicts dialog box, which is shown in Figure 28.12. This dialog box is new to Windows 8. You select one or both of the files. If you select both, the file will be moved or copied. Its name will be the same as the original name followed by a number, like `Landscape-EastWing(2)`, for example.

FIGURE 28.12

The File Conflicts dialog box displays when a folder already includes the same file as the one you want to copy or move there



1 File Conflicts

Which files do you want to keep?

If you select both versions, the copied file will have a number added to its name.

☐ Files from Downloads

☐ Files already in My Documents

Landscape-EastWing.bmp

☐ 5/12/2012 7:18 PM
0 bytes

☐ 5/12/2012 7:18 PM
0 bytes

☐ Skip 1 files with the same date and size

Click Continue when you are ready to complete the copy procedure.

The bottom line here is that you can move or copy any file anywhere at any time. There are no restrictions. It's simply a matter of first knowing why you want to move or copy, because there is no point in doing such things purely for the heck of it. Then you need to know where the item is now and where you want to move or copy it to. Once all that is squared away, use either a dragging method or a copy-and-paste method described earlier to do the move or copy.

In addition to the techniques already described, you can get stuff into your computer using methods listed here:

- To get pictures from a digital camera into your computer, use the Photos app (see Chapter 23).
- To get music from a CD or portable music player into your computer, use Windows Media Player (see Chapter 24).

Renaming Files

Renaming a file or folder is simple. Just right-click the item you want to rename and choose Rename. The existing name will become highlighted in blue. You can type a new name, or edit the current name, and then press Enter.

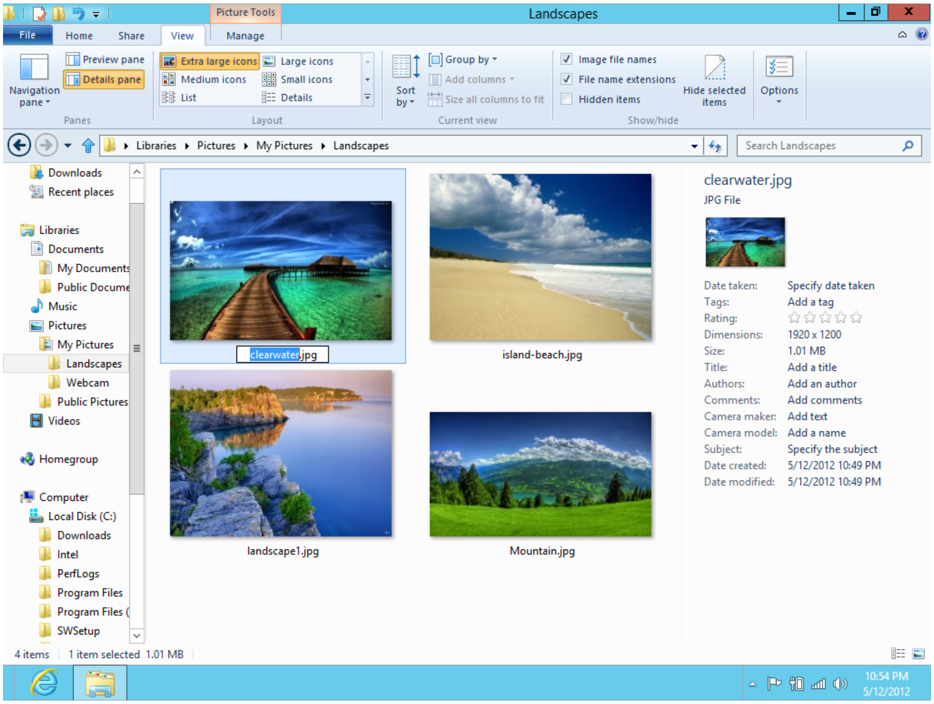
If you've taken filename extensions out of hiding, that part of the name won't be highlighted. For example, the `.jpg` extension on the photo named `Clearwater.jpg` shown in Figure 28.13 isn't highlighted. That's because you don't want to change the extension unless you *really* know what you're doing. Guessing is unlikely to work. At the very least, make sure you know the extension you're about to change. That way, if you ruin the file, you can rename the file back to the original extension (in case you miss the opportunity to undo the rename).

TIP

Click once to select a file, pause briefly, and then click the filename again to highlight the name and rename it.

FIGURE 28.13

The filename extension is not highlighted


Picture Tools
Landscapes
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Libraries ▸ Pictures ▸ My Pictures ▸ Landscapes
Search Landscapes
Downloads
Recent places
Libraries
Documents
My Documents
Public Docume
Music
Pictures
My Pictures
Landscapes
Webcam
Public Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Downloads
Intel
PerfLogs
Program Files
Program Files (
SWSetup
clearwater.jpg
island-beach.jpg
landscape1.jpg
Mountain.jpg
4 items
1 item selected 1.01 MB
10:54 PM
5/12/2012

clearwater.jpg
JPG File

Date taken: Specify date taken
Tags: Add a tag
Rating: ☆☆☆☆☆
Dimensions: 1920 x 1200
Size: 1.01 MB
Title: Add a title
Authors: Add an author
Comments: Add comments
Camera maker: Add text
Camera model: Add a name
Subject: Specify the subject
Date created: 5/12/2012 10:49 PM
Date modified: 5/12/2012 10:49 PM

Undoing a rename

You can undo a rename as you can undo just about anything else. But as always, you have to do so fairly soon after the rename. Just press Ctrl+Z or click the Organize button and choose Undo. If it's too late for that, you have to rename the file again back to its original name and extension.

So How Do I Change a File's Type?

You can't simply change a file's extension to change the file's type. If you can open the file, and it's not a music or video file, you may be able to just choose File ➪ Save As from the opening program's menu. Then set the Save As Type option to the file type you want before you click the Save button.

If it's a music or video file, you'll likely need a conversion program. Search the web or a download site such as `www.download.com` or `www.tucows.com` for `convert` *`ext1`* `to` *`ext2`* (where *`ext1`* is the extension of the file type from which you want to copy, and *`ext2`* is the extension of the file type to which you want to copy) and see what programs you can find.

In some cases, you simply need the right program, app, or reader to open the file without converting it. Some common examples include `.pdf` files, which require Adobe Reader (`www.adobe.com`) or the new Windows Reader app, QuickTime movies and iTunes (players are available from `www.apple.com`), and Office documents and snapshots. Viewers for many such files are available from the Windows Store and `http://download.microsoft.com`.

Renaming multiple files

To rename multiple files, select all of their icons using any methods described near the start of the chapter. Then right-click any one of them and choose Rename. Type the new name (again, don't change the extension if it shows up) and press Enter. The files will all be given the name you specified. All but the first will have numbers. For example, if you renamed to River, the files will be named River, River (2), River (3), River (4), and so forth.

TIP

If the lack of a number on the first renamed file bugs you, right-click its icon and choose Rename. Then add the (1) to the name yourself.

If you have a relatively large number of files and want to rename just a part of the filename for each one, you can turn to the Command Prompt to rename the files. For example, assume that you have a set of files named `img-old-01.jpg`, `img-old-02.jpg`, `img-old-03.jpg`, and so on in sequence. You want to replace the word "old" with the word "new." Here's how to do it:

1. Press Windows+X and choose Command Prompt to open a command console.
2. Type **CD \*(path)*** where ***(path)*** is the path to the folder where the files reside that you want to rename. For example, assuming the files are located in your Documents folder and your username is rtidrow, type **CD \Users\rtidrow\My Documents.**
3. Type the command **rename img-old-??.jpg img-new-??.jpg** and press Enter.

The question marks in the command essentially tell Windows to leave those characters alone. In this example, the sequential image numbers remain the same and only the word in the middle of the filename is changed.

Before you try renaming multiple files using the command console in this way, we suggest you make a backup copy of the files in a different folder. That way, if you really mess up the filenames by typing an incorrect command, you can simply copy the files back to the original folder to restore the old filenames.

Deleting Files

In computers, the term *delete* is synonymous with "throw in the trash." That's important to know because you wouldn't want to throw important paper documents from your filing cabinet into the trash. Likewise, you don't want to delete anything important that's on your computer.

It's easy to delete files and folders. Perhaps it's too easy because it's a leading cause of headaches and disasters, especially among beginners and casual computer users who try to learn by guessing and figuring things out. Deleting and "moving to the Recycle Bin" are basically the same thing. So let's start with a couple of good rules of thumb. Before you delete an item or move it to the Recycle Bin, ask yourself two questions:

- Do I know exactly what this file (or folder) is?
- Am I 100 percent certain that neither I nor my computer will need it in the future, ever?

If the answer to both questions is "Yes," go ahead and delete the file. If the answer to either question is "No," don't delete the file or move it to the Recycle Bin.

CAUTION

When you delete a folder, you delete all of the files and subfolders inside that folder! That means one small delete can lead to many lost files. Never delete a folder unless you're absolutely sure that the folder and its subfolders contain only files that you'll never need again.

Deleting is a simple process. If you want to delete a single file or folder, first select its icon. Optionally, if you want to delete multiple items in one fell swoop, select their icons. Then, do whichever of the following is most convenient for you:

- Right-click the icon (or any selected icon) and choose Delete.
- Press the Delete (Del) key.
- Choose the Home tab and click Delete.
- Drag the selected item(s) to the Recycle Bin.

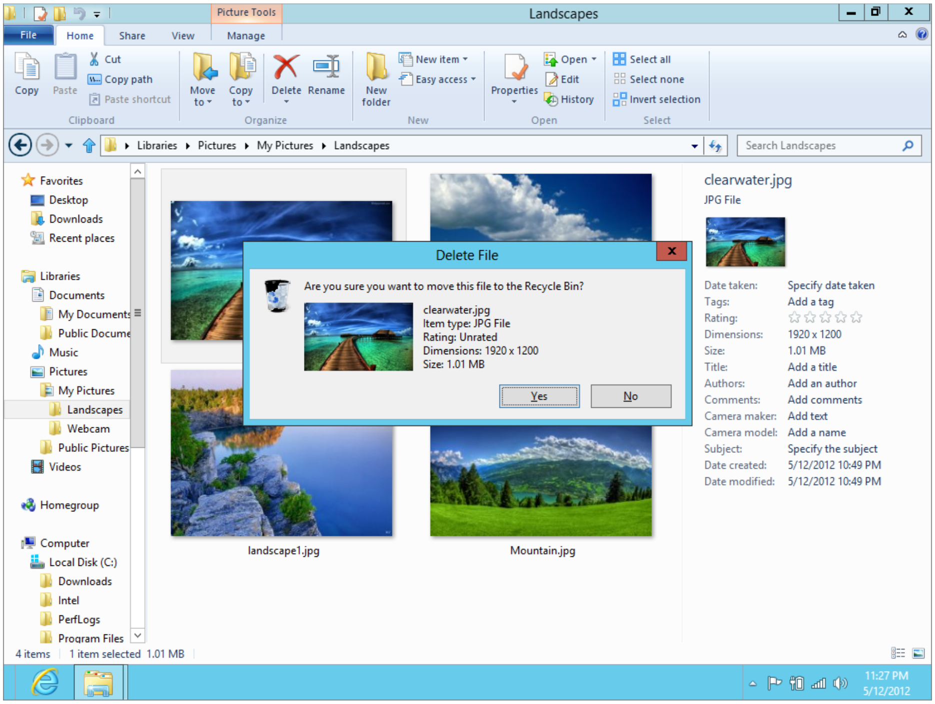
By default, with Windows 8 you are not prompted to confirm before the item(s) are deleted. In previous Windows versions, a confirmation appeared as a question asking if you're sure, and gave you a choice as to whether or not you want to proceed. This is no longer the default behavior option. Once you delete the file, it is sent to the Recycle Bin.

However, you can set up Windows 8 to display the confirmation. To do this, right-click the Recycle Bin and choose Properties. In the Recycle Bin Properties dialog box, choose Display Delete Confirmation Dialog and then click OK.

Now when you delete a file using the preceding methods, the Delete File dialog box appears. Figure 28.14 shows an example of the confirmation message.

FIGURE 28.14

Asking for confirmation before deleting



Delete File

Are you sure you want to move this file to the Recycle Bin?

clearwater.jpg
Item type: JPG File
Rating: Unrated
Dimensions: 1920 x 1200
Size: 1.01 MB

clearwater.jpg
JPG File

Date taken: Specify date taken
Tags: Add a tag
Rating: ☆☆☆☆☆
Dimensions: 1920 x 1200
Size: 1.01 MB
Title: Add a title
Authors: Add an author
Comments: Add comments
Camera maker: Add text
Camera model: Add a name
Subject: Specify the subject
Date created: 5/12/2012 10:49 PM
Date modified: 5/12/2012 10:49 PM

4 items 1 item selected 1.01 MB

Picture Tools
Landscapes
File
Home
Share
View
Manage
Copy
Paste
Cut
Copy path
Paste shortcut
Move to
Copy to
Delete
Rename
New folder
New item
Easy access
Properties
Open
Edit
History
Select all
Select none
Invert selection
Clipboard
Organize
New
Open
Select
Libraries ▸ Pictures ▸ My Pictures ▸ Landscapes
Search Landscapes
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
My Documents
Public Documents
Music
Pictures
My Pictures
Landscapes
Webcam
Public Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Downloads
Intel
PerfLogs
Program Files
Yes
No
landscape1.jpg
Mountain.jpg
11:27 PM
5/12/2012

The idea is to read the message, and then click Yes only if you're sure. If you're not so sure, you should click No. Clicking Yes deletes the files. Clicking No keeps the files right where they are.

When you send something to the Recycle Bin, you still get one last chance to change your mind. It's kind of like fishing something out of the wastepaper basket before you empty it for good. That doesn't mean you should put things you intend to keep in the Recycle Bin. You wouldn't put important papers in your trash can. Never put important files or folders in your Recycle Bin.

CAUTION

Despite its environmentally friendly name, the Recycle Bin *is* a trash can and should be treated as such. Neither the Recycle Bin nor your trash can are good places to put things you intend to keep!

When you permanently delete a file or folder, there's no turning back. Whatever you permanently deleted is gone for good and there's no changing your mind and getting it back. Permanently deleting a file is akin to putting something down the garbage disposal. Or dousing the thing with gasoline and burning it to ashes. There is no "undo" for such actions.

TIP

In some cases, it might be possible to use the Previous Versions feature described in Chapter 31 to recover a permanently deleted file. But to play it safe, you should treat all deletions as though they were permanent. There are also third-party programs that can recover deleted files, as well as data recovery services that can recover deleted data. However, the likelihood of recovering the deleted data decreases if any data is written to the disk before recovery is attempted.

Using the Recycle Bin

The Recycle Bin stores copies of files you've deleted from your hard disk. You can quickly see if one or more files are in the Recycle Bin by looking at its icon on the desktop. If the icon shows that the trash can is empty, then no files or folders are currently in the Recycle Bin. If the icon appears to have "trash" in it, then you know that one or more files or folders have been sent to the Recycle Bin and it has not been emptied since the last file was sent there.

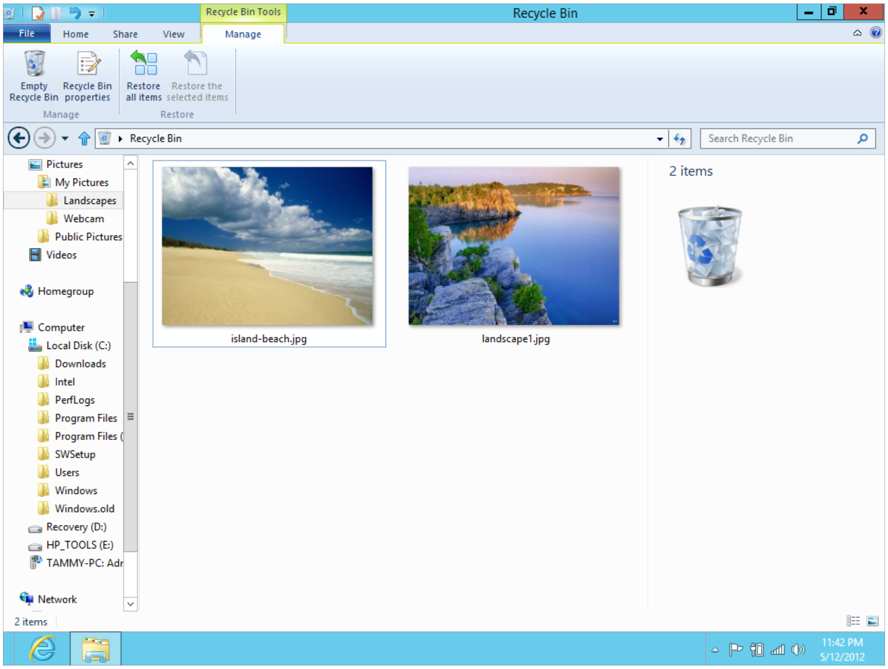
To open your Recycle Bin, use whichever method is easiest for you:

- Open the Recycle Bin on the desktop.
- Click Recycle Bin in the Folder list in Explorer's Navigation pane.
- Click the leftmost arrow in Explorer's Address bar and choose Recycle Bin.
- Type **Recycle Bin** in Explorer's Address bar and press Enter.

When the Recycle Bin opens, it looks like any other folder. Figure 28.15 shows an example.

FIGURE 28.15

An open Recycle Bin


Recycle Bin Tools
Recycle Bin
File
Home
Share
View
Manage
Empty Recycle Bin
Recycle Bin properties
Restore all items
Restore the selected items
Manage
Restore
Recycle Bin
Search Recycle Bin
Pictures
My Pictures
Landscapes
Webcam
Public Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Downloads
Intel
PerfLogs
Program Files
Program Files (
SWSetup
Users
Windows
Windows.old
Recovery (D:)
HP_TOOLS (E:)
TAMMY-PC: Adr
Network
island-beach.jpg
landscape1.jpg
2 items
2 items
11:42 PM
5/12/2012

Each icon in the Recycle Bin represents an item that's in your computer trash can, so to speak. You have basically two ways to use the Recycle Bin:

- *Restore* files that you've accidentally deleted, so they go back to their original folders. (Same as fishing something out of your real trash can.)
- *Empty* the Recycle Bin, thereby permanently deleting the files within it to reclaim the disk space they were using. (Same as emptying your real trash can into a trash truck or incinerator.)

The sections that follow look at each option.

Recovering accidentally deleted files

If you accidentally deleted some files or folders from your hard disk, and if they were sent to the Recycle Bin, you can get them back, provided that you don't empty the Recycle Bin first. You have three ways to do that:

- To put all items back where they were, click Restore All Items on the Manage tab.
- To put a single item back where it was, right-click its icon and choose Restore.

- Optionally, you can select multiple icons, right-click any selected icon, and choose Restore to put all those selected items back where they were.

Each file and folder you restore will be returned to its original location.

Permanently deleting recycle bin files

When you feel confident that the Recycle Bin contains only folders and files that you'll never need again, click Empty The Recycle Bin in the toolbar. The icons in the Recycle Bin disappear. The files and folders that those icons represented are permanently deleted from your hard disk. The space they occupied is freed up for anything you might want to save in the future.

If you want to remove only one or a selection of files from the Recycle Bin, select those files, right-click, and choose Delete. Windows asks if you want to permanently delete the files, removing them from the Recycle Bin. Click Yes to delete them, or No to leave them in the Recycle Bin.

TIP

You can empty the Recycle Bin without opening it first. Right-click the Recycle Bin's icon and choose Empty Recycle Bin. Just keep in mind that in doing so, you're presuming there's nothing in the Recycle Bin you intended to keep.

When you've finished with the Recycle Bin, you can close it as you would any other window — by clicking the Close (X) button in its upper-right corner.

For all intents and purposes, you should consider the files that were in the Recycle Bin as permanently gone. But if you messed up and emptied too early, you *might* be able to get some of the files that were in there back using the Previous Versions feature discussed in Chapter 31.

Creating and Deleting Shortcuts

Shortcuts provide an easy way to get to a file or folder without having to navigate through a bunch of folders. For example, let's say you have an external disk drive X. On that drive you have a folder named My Big Project inside another folder named Xternal Docs. To view the contents of your My Big Project folder, you have to open your Computer folder, open the icon for drive X, open the Xternal Docs folder, and then open the My Big Project folder. Doing that repeatedly gets tiresome.

If you create a shortcut to My Big Project, you won't have to go through all those steps. You just have to open the My Big Project shortcut icon. That shortcut icon can be anywhere you like — on the desktop, in your Documents folder, in the Favorites pane — or any combination thereof.

You can create a desktop shortcut to virtually any program, folder or file just by right-clicking that item's icon and choosing Send To ➪ Desktop (create shortcut). You can also use any of the following methods to create a shortcut to a file or folder:

- Hold down the Alt key as you drag an icon to the folder in which you want to place the shortcut.
- Drag, using the right mouse button, the selected icon(s) to where you want to put the shortcuts. After you release the right mouse button, click Create Shortcuts Here.
- Copy the selected icon(s) to the Clipboard (press Ctrl+C or right-click and choose Copy). Then right-click some empty space at the location where you want to place the shortcuts and choose Paste Shortcut.

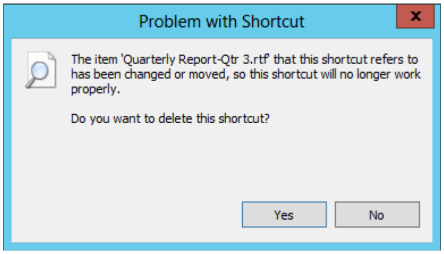
Once you have a shortcut, you can double-click (or click) its icon to open the item to which the shortcut refers.

It's important to understand that when you delete a shortcut to a resource, you delete only the shortcut. You don't delete the folder or file to which the shortcut refers. That means you can easily create a bunch of shortcuts to a folder you're working with right now.

Later, when you move on to another project in another folder, you can delete all those shortcuts and replace them with new shortcuts to whatever folder you're working in currently. But you have to make sure you delete the shortcuts only, not the real folder because when you delete the real folder, you also delete everything that's in that folder. You also render the shortcuts useless because the location to which they refer no longer exists. When you try to open a shortcut that points to a non-existent file or folder, you see a message like the one in Figure 28.16.

FIGURE 28.16

Opening a shortcut that leads nowhere



Problem with Shortcut

The item 'Quarterly Report-Qtr 3.rtf' that this shortcut refers to has been changed or moved, so this shortcut will no longer work properly.

Do you want to delete this shortcut?

If you deleted the item recently and it's still in the Recycle Bin, click the Restore button. The original item will be taken out of the trash and put back where it belongs, and the shortcut will work. Otherwise, if there's no way to recover the item to which the shortcut refers, all you can do is delete the now-useless shortcut by clicking the Yes button.

NOTE

If the shortcut refers to an item on external media (such as a flash drive, external USB drive, or DVD), that disk has to be in its drive for the shortcut to work.

If you're thinking about deleting an icon, but aren't sure if it's a shortcut or the real thing, there are ways to find out. For one thing, all links in the Favorites portion of Explorer's Navigation bar are shortcuts. Desktop icons you control from the Desktop Icon Settings dialog box are also shortcuts. We're not suggesting you delete any of those unless you have a very good reason, but if you delete one, be aware that you're deleting only the shortcut and not the actual item.

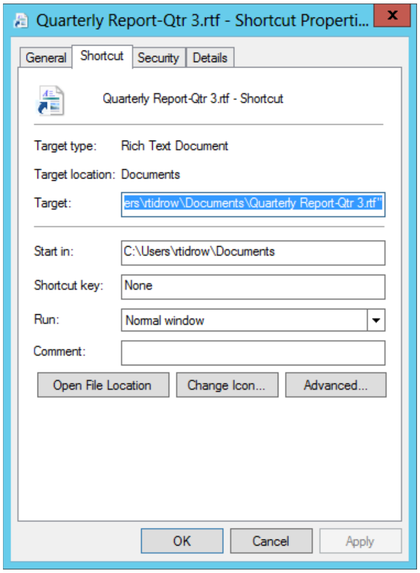
TIP

Chapters 13 and 27 provide more detailed information about the items described in the preceding paragraph.

Shortcut icons of your own making have many characteristics that make it easy to distinguish them from the items to which they refer. The most obvious is the curved arrow that appears right on the icon. The name of the icon usually has – `shortcut` at the end (if you don't rename the shortcut). The filename extension for a shortcut icon is always `.lnk` (for link). The size of a shortcut will always be tiny (1KB or less). When you right-click the icon and choose Properties, the General tab shows the Type of File as Shortcut (`.lnk`). The Shortcut tab shows information about the icon and its target, as in Figure 28.17.

FIGURE 28.17

Anatomy of a custom shortcut icon



Quarterly Report-Qtr 3.rtf - Shortcut Properti...

Quarterly Report-Qtr 3.rtf - Shortcut

Target type: Rich Text Document

Target location: Documents

Target: ers\vtidrow\Documents\Quarterly Report-Qtr 3.rtf"

Start in: C:\Users\vtidrow\Documents

Shortcut key: None

Run: Normal window

Comment:

When you delete a shortcut you delete only the shortcut, not the item to which it refers. So you can create and delete shortcuts on-the-fly without losing any important files or folders. But the #1 rule of deleting still applies: Know exactly what you're deleting and why you're deleting it *before* you delete. It's as simple as that.

Managing Files with DOS Commands

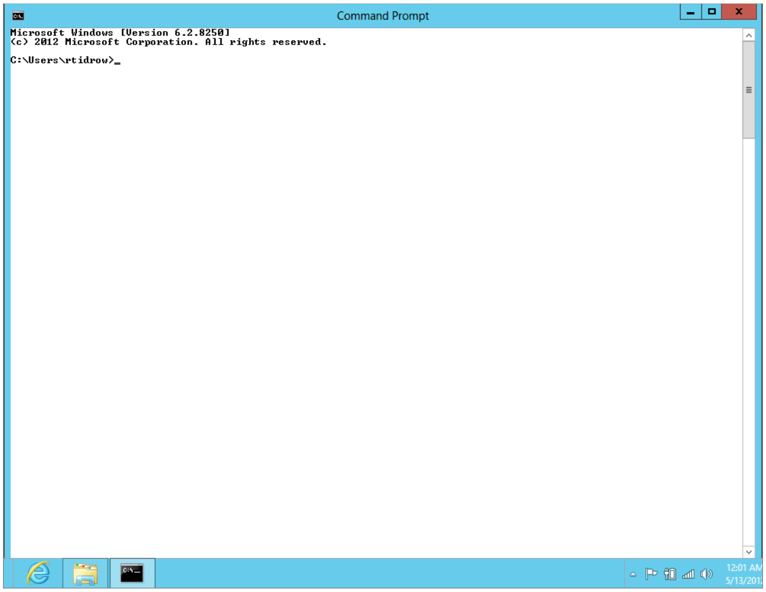
This section is for people who were around in the DOS days and remember commands such as `CD` (change directory), `Copy` (to copy files), and so forth. All those old DOS commands still work. Using DOS commands is useful in some instances, such as when you want to print a list of filenames or paste them into a file. So, we'll look at how all that works in this section.

Getting to a command prompt

The first step to using DOS commands is to get to the Command Prompt window (also called a *console* window). To do so, press Windows+X and then choose Command Prompt. A window reminiscent of ye olde DOS days opens, complete with the standard prompt that displays the folder (*directory* in DOS terms) that you're currently in. Figure 28.18 shows an example. Note that we've changed the size of the default window from 80×25 pixels to 120×60. Also we've changed colors for the console to be black text on a white background. The default is white text on a black background.

FIGURE 28.18

Command Prompt window



```
Microsoft Windows [Version 6.2.8250]
(c) 2012 Microsoft Corporation. All rights reserved.

C:\Users\rtidrow>_
```

The Command Prompt window has a title bar and taskbar button. You can drag the window around by its title bar. To a limited extent, you can size the Command Prompt window by dragging any corner or edge, but the height is limited to the number of lines currently displayed within the window.

To get full control over the size of the Command Prompt window, you need to use its Properties dialog box. That Properties dialog box also lets you choose a cursor size, a Full Screen View, a font, text and background colors, and so forth.

You can get to the Command Prompt window's Properties dialog box in two ways. If you want to change properties for the current session only, right-click the Command Prompt title bar and choose Properties. If you want to change the defaults for future sessions as well, right-click the title bar and choose Defaults. The dialog box that opens is self-explanatory and is a normal Windows dialog box.

You can scroll up and down through the Command Prompt window using the vertical scroll bar at its right. The navigation keys don't work unless you right-click within the window and choose Scroll. You can't type normal characters in the scroll mode; you can just navigate up and down. To get out of scroll mode and back to normal typing, press Enter.

To exit a command prompt session, type **exit** and press Enter. Or close the Command Prompt program window by clicking its Close (X) button or by right-clicking its taskbar button and choosing Close.

Using the command prompt

The Command Prompt window works just like the screen did in DOS. You type a command and press Enter (assuming that you're not in the aforementioned "scroll mode," wherein typing normal characters just triggers a beep). After you press Enter, you see the results of the command and another command prompt appears. For example, if you enter `Help` (that is, type the word `Help` and press Enter), you see a list of all the supported DOS commands.

To get help with a command, type its name followed by a forward slash and question mark. For example, entering the command `dir /?` shows help for the `Dir` command. The Doskey feature is enabled automatically (again assuming that you're not in the bizarre scroll mode). So, you can use the up and down arrow keys (↑ and ↓) to retrieve previous commands from the current session. Press the right and left arrow keys (← and →) to bring back and remove the previous command one character at a time.

NOTE

If the characters you type result only in a beep and nothing on the screen, right-click in the Command Prompt window and choose Scroll to get back to normal typing.

The mouse doesn't do much in the Command Prompt window. As mentioned, you can right-click the title bar (or its taskbar button) to get to the Properties sheet. You can right-click and choose Scroll to enter the (disturbing) scroll mode where navigation keys move through the window and normal characters do nothing but beep at you (although pressing Enter terminates the disturbing scroll mode).

Copy-and-paste in the Command Prompt window

Right-clicking in the Command Prompt window provides some options that allow you to use copy-and-paste. It's a bit tricky, but handy when you want to copy a lengthy list of filenames into a Word, WordPad, or Notepad document. If you'll be using the keyboard to select only a portion of the text, you first want to use the scroll bar to navigate to the text that you want to select If you'll be using the mouse to select a portion of text, or will be selecting all the text in the window, it's not so important where you start.

To select the entire window, right-click within the window and choose Select All. To select only a portion of the window's contents, right-click within the Command Prompt window and choose Mark. You'll see a square cursor. To select with the keyboard, hold down the Shift key and use the arrow keys, PgUp, and PgDn keys to extend the selection through the text you want to select. With the mouse, move the mouse pointer to the far-right edge of the window, hold down the left mouse button, and then drag diagonally through the text you want to select.

Once you've selected some text, press Enter to copy the selected text and also clear the selection. From there, you can paste the copied text into any document that accepts pasted text.

You can paste a command into the window, but it has to be a valid DOS command. Just right-click near the command prompt and choose Paste.

Navigating from the command prompt

Navigating to a particular drive at the command prompt is easy. Type the drive letter followed by a colon and press Enter. For example, entering `d:` takes you to drive D:. Entering `c:` takes you to drive C:.

Use the `cd` (Change Directory) command, just as you did in DOS, to go to a folder on the current drive. You can use the following t `cd` commands:

- `cd\` takes you to the root folder of the current drive.
- `cd..` takes you to the parent of the current folder.
- `cd` *`folder`* takes you to the subfolder specified by *`folder`*.

Using wildcards

When specifying filenames in most DOS commands, you can use wildcard characters to represent characters in the filename. Use the `?` character to represent a single character and the `*` character to represent multiple characters. For example, `a?c.txt` would match `abc.txt`, `a2c.txt`, `aqc.txt`, and so on. By comparison, `a*c.txt` would match `abc.txt`, `a12345c.txt`, `anotherc.txt`, and so on.

A common use for the wildcard is to find all files of the same type, such as `*.jpg`, which would match all JPG files. So, the following command would list all JPG files in the current folder:

```
dir *.jpg
```

The following section explains how to use the `dir` command.

Printing a list of filenames

Perhaps the one thing that the DOS command offers that Explorer doesn't is the ability to easily print a list of filenames from any folder, or even a parent folder and all its subfolders. Although you can print directly by following any command with `>prn`, we're sure most people would prefer to get that list into a Word or WordPad document. From there, you can edit and sort the filename list to your liking, and then print it.

You use the `dir` command to list the filenames. You may find some of the following optional switches useful for controlling how `dir` displays its output:

- `/s` — Include filenames from subfolders.
- `/b` — Display filenames in bare format (no headings or summary).
- `/w` — Show in wide format.
- `/d` — Same as wide, but sorted by columns.
- `/n` — Use long list format with filenames to the far right.
- `/l` — Use lowercase letters.
- `/o` — Sort output by column as follows: n (by name), `s` (by size), `e` (by extension), `d` (by date), `-` (prefix for descending sort), g (group folder names first).

As an example of using the `/o` switch, the command `dir /on` lists filenames in ascending alphabetical order. The command `dir /o-s` lists filenames by size, in descending order.

Let's look at a practical example. Suppose that you've downloaded music to your Music folder. The songs are organized into folders by artist and album. But you want a list of all song filenames, from all the subfolders.

Step 1 is to get to the parent folder of all the files you want to list. The DOS command would be `cd` followed by the full path to that folder: for example, `cd C:\Users\`*`yourUserName`*`\Music` where *`yourUserName`* is the name of your user account.

Next, you need to enter a `dir` command with the `/s` switch to list the filenames from all the subfolders. You can use any other switches in combination with `/s`. For example, here's a `dir` command that lists all the filenames in bare format:

```
dir /b /s
```

Here's one that lists files in the columnar wide format with filenames listed alphabetically by name:

```
dir /d /on /s
```

You can try out various DOS commands to see which presents the most reasonable list of filenames. Then, when you get a decent list, enter that command again, but follow it with `>`*`filename`*`.txt` where *`filename`* is any name of your choosing. The file will be stored in whatever folder you're currently in. For this example, we'll use `SongList.txt` as the filename. So, you might enter a command like this at the command prompt:

```
dir /d /on /s >SongList.txt
```

You won't get any feedback on the screen after you redirect the output to a file. You can just exit the Command Prompt window. Then use File Explorer to navigate to the folder from which you ran the `dir` command. You'll find your `SongList.txt` file there. Right-click it and choose Open With ➪ Microsoft Word (or whatever program you want to use to edit the file).

TIP

To open a text from a DOS prompt, type the command `notepad` *`file.txt`*, where *`file.txt`* is the name of the text file you want to open.

The list will look exactly like DOS output, which might not be ideal. But if you know how to use the program, it shouldn't be too tough to select and delete anything you don't want in the document. Then, save it, print it, and keep it for future reference.

TIP

If you're a Microsoft Office guru, you could create a macro to clean up the output from a DOS command, maybe even convert it to a list of comma-separated values. Then, you could save *that* file as a text file, and import it into an Access table or Excel spreadsheet.

Whether or not this example of exporting filenames is of any value to you, we can't say. But it is just an example. If you know DOS, you may be able to come up with more useful applications of your own. You can do anything at the Command Prompt window that you could do in DOS, even copy and delete files. Remember that for a quick overview of all the DOS commands available in the Command Prompt window, just type **help** at the command prompt and press Enter.

Wrap-Up

Managing files and folders in Windows 8 is a lot like it was in earlier versions of Windows. You just have more ways of doing things. Here's a quick wrap-up of the main topics covered in this chapter:

- To select a single icon to work with, click it (if you're using double-click to open files) or point to it (if you're using single-click to open files).
- To select multiple icons, use Ctrl+click or Shift+click, or select it with your finger (if you have a touch screen device) or the drag-through method, whichever is appropriate to your goal and easiest for you to use.
- To move or copy selected files and folders, drag them to some new location, or use copy-and-paste, or use the Copy or Move options under File And Folder Tasks in the Explorer bar.
- To rename a file or selected files, right-click and choose Rename.
- To delete a file or selected files, right-click and choose Delete.
- Small items you delete from your hard drive are just moved to the Recycle Bin.
- Large files, and files you delete from removable media, are not sent to the Recycle Bin.
- To recover a file from the Recycle Bin, right-click its icon and choose Restore.
- To permanently delete all the files in the Recycle Bin and reclaim the disk space they're using, empty the Recycle Bin.
- When you delete a shortcut to a resource, you delete only the shortcut — not the resource itself.
- If you're a DOS guru, you can still use DOS commands to manage files. Press Windows+X and choose Command Prompt to get to the Command Prompt window.

CHAPTER 29

Searching for Files and Messages on Your Computer

IN THIS CHAPTER

- Searching from the Charms Bar
- Searching from folders
- Searching your computer and network
- Specifying search criteria
- Saving and reusing searches

Hard disk storage in the twenty-first century is reliable, fast, and cheap. Just about every computer sold in the past few years has lots of it. The result is that people now store many thousands of files on their computers. To organize their folders, people use lots of folders and subfolders. Although it's certainly good to have lots of well-organized files on your hard disk, it has a couple of downsides. For one, drilling down through a ton of folders to get to a specific file gets tedious. For another, it's easy to forget where you put things and what you named them.

In earlier versions of Windows, you could use shortcuts and searches to help with these problems, but too many shortcuts just add that much more clutter to the screen. The old style of searching is slow and tedious. Searching in Windows 8 is a lot like searching on the Internet. You don't have to search for specific filenames. You can search by content and meaning. And in most cases the search results are instantaneous. You don't have to wait for the system to slog through the whole file system looking at every file.

Basics of Searching

Like filing cabinets, computers just store information. The information in your filing cabinet has no "meaning" to your filing cabinet. Likewise, the information in your computer has no meaning to the computer. Searching a computer is much like searching through a filing cabinet or the index at the back of a book.

In the next sections, we try to clear up some common misconceptions about searching. Along the way we offer some tips and techniques that should make it easier to find what you're looking for.

You're not asking it questions

The most basic thing you need to understand about searching is that you're not asking the computer a question. Computers don't understand human languages the way people do. As mentioned, searching a computer (or the Internet) is much like searching the index at the back of a book. You need to zero-in on a specific word or phrase. The more specific that word or phrase, the more specific the search results.

Let's use the Internet as an example. You certainly can search for something like:

What is the capital of Kansas?

You will likely get your answer from any Internet search engine. However, you'd probably get the same or similar results if you search for:

capital Kansas

The keywords in the search are **capital** and **Kansas**. The other words don't help to narrow the search much because you're searching for words, not meaning. Virtually every page on the Internet contains the words **what**, **is**, **the**, and **of**, even if the page has nothing to do with Kansas or capital.

We're not saying you *can't* conduct a search for **What is the capital of Kansas?** You certainly can if you want to, and you will get results. However, the results won't be much different than if you left out the *noise words*. A noise word is any word that appears in virtually all written documents and doesn't help describe what the page is about. Examples of noise words include the following:

a
about
an
are
but
did
how
is
it
me
my
of
should
so
than
that
the
then
there
these
they
this
to
too
want
was
we
were
what
when
where
which
who
will
with
would
you
your

Some search programs will actually remove all the noise words before conducting the search. Others will include them. But sometimes that works against you because you find things in your search results that have nothing to do with what you were really searching for.

The bottom line is this: When you search for something, don't try to word it as a question. Instead, search for an exact word or phrase that has a specific meaning.

Be specific

The key to successful searches, whether on the Internet or on your computer, is to be specific. The more specific you are about what you're searching for, the better the results.

Here's an Internet search as an example. Suppose you're looking for quotes by Benjamin Franklin on health. If you search Google for **health**, you get links to about 4.3 billion pages. That doesn't help much because a lifetime isn't enough time to look through all those. If you search Google for **Benjamin Franklin**, you get links to 28.7 million web pages. That's still too many.

If you search Google for **Benjamin Franklin health**, you get links to 39.7 million pages. If you search for **Benjamin Franklin quotation health**, you get links to 3.7 million pages. Now, if you add the word **wise** to the search (because the quote contains that word), you get about 625,000 hits. Notice how the more specific words there are in the search, the smaller (and also better targeted) the search results. In fact, one of the first pages listed will probably contain exactly what you're looking for. The moral of the story being: The more specific the search, the more specific the search results.

TIP

After you've clicked a link to a page, you can search that specific page for a word by choosing Edit ➪ Find on this page (or pressing Ctrl+F) in Microsoft Internet Explorer. If you use some other web browser, check its Edit menu or help for a similar feature.

Of course, searching the Internet and searching your own computer are two entirely different things, for the simple reason that the Internet exists *outside* your computer, and its searches don't include things that are inside your computer. But the general rule of specificity applies to all searches.

Spelling counts

When you write text for a human to read, you can get away with a ton of spelling errors. For example, the following sentence is loaded with spelling errors but you can probably still figure out what the sentence says:

Th kwik brwn dogg jmpt ovr teh lzy mune.

You can figure it out because you have a brain, and brains have many strategies for figuring things out based on context, the sounds the letters make when read aloud, and so forth. Computers don't have brains and can't figure things out.

Plenty of computer programs (including tools built directly into Windows 8) are available that can correct your spelling, suggest alternate spellings, and such, but those programs aren't as good as a human brain. I realize that spelling is one of those traits that some people are good at, and some people aren't. But knowing how to spell the words you're searching for is a good thing.

If you're not sure how to spell something, try typing it into a word processing system that has spell checking. Or, if that's not an option for you, try an online service such as `http://www.spellcheck.net` or `http://www.dictionary.reference.com`. If it's a tech term, try `http://www.webopedia.com`.

Where you start the search matters

You can search in many different places and for many different kinds of things. Where you start your search and what you search for matters a lot. For example, there's the World Wide Web, which consists of several billion pages of text that exist outside your computer. It makes no sense to search the Internet when you're looking for something that's in your own computer.

Inside your own computer are basically two types of searches to consider. One is a search for *help*. There, you're typically looking for instructions on how to perform some task. Chapter 7 provides strategies for getting help with Windows 8. You also can rely on app- or application-specific help for assistance while using an app or program. This chapter has nothing to do with searching for help.

This chapter is mostly about searching for programs, folders, files, and messages that are inside, or directly connected to, your computer; the kinds of things you can use even when you're offline (not connected to the Internet).

How Searching Works

Understanding how searches work in Windows 8 is critical to performing quick, successful searches. Most searches are performed on an *index*. The index is like the index at the back of this or any other book. It's basically a list of key words. Of course, Windows 8's index doesn't contain page numbers. In place of page numbers, it contains filenames and locations. You never see the index with your own eyes. The index is built, maintained, and searched behind the scenes without any intervention on your part.

Some searches you perform search the entire index. Others search only for programs, files, e-mail messages, or contacts. Still others ignore the index and search through every single folder on one or more drives. It all depends on where you start the search and how you perform the search. Let's start with common everyday searches that are fast and easy to do.

TIP

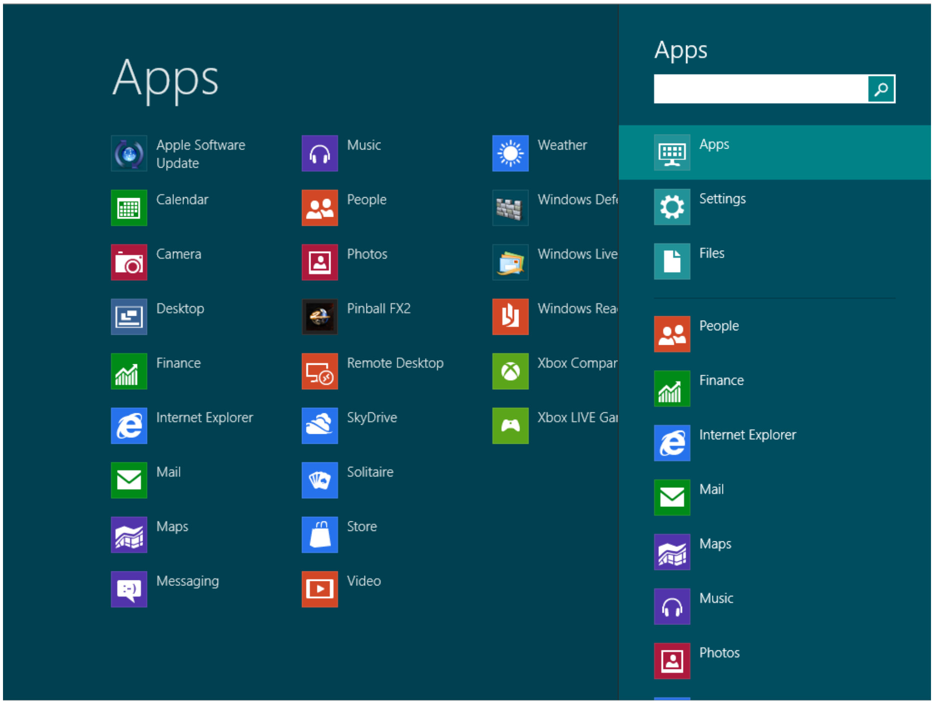
The Start menu Search box (press Windows+X) uses the Windows 8 Interface search tool and provides a quick and easy way to open programs, folders, files, and messages.

Quick Charms Bar Searches

The quick and easy way to find a program, Windows 8 app, favorite website, file, contact, or e-mail message is to search right from the Charms menu. Display the Charms Bar and choose Search. The Search box displays at the top right of the Search page (see Figure 29.1). This is the same search box you see even if you choose to search from the Windows desktop. The cursor is already in the Search box, so you can just start typing.

FIGURE 29.1

Search box at the top right of the Search page


Apps
Apple Software Update
Calendar
Camera
Desktop
Finance
Internet Explorer
Mail
Maps
Messaging
Music
People
Photos
Pinball FX2
Remote Desktop
SkyDrive
Solitaire
Store
Video
Weather
Windows Defe
Windows Live
Windows Rea
Xbox Compar
Xbox LIVE Gai
Apps
Apps
Settings
Files
People
Finance
Internet Explorer
Mail
Maps
Music
Photos

Windows 8 breaks down the type of searches into the following categories. The default is Apps:

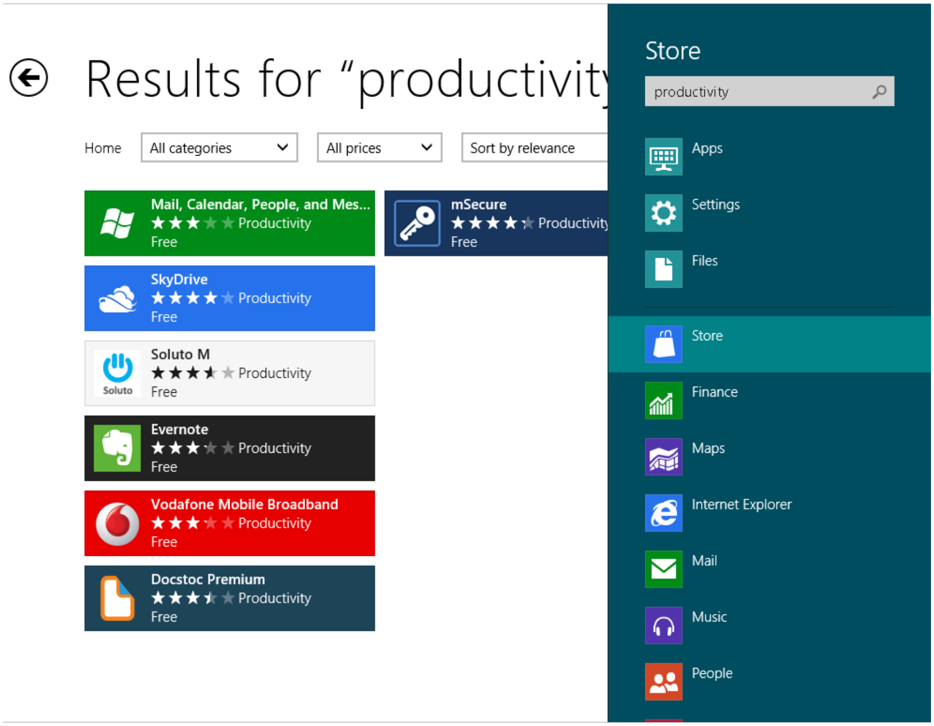
- **Apps:** Searches apps and programs that are currently installed on your computer and ready to use.
- **Settings:** Searches Windows configuration settings, such as those that can change the display resolution on your computer.
- **Files:** Searches documents and other files on your hard drive.
- **People:** Searches contacts stored on your computer.
- **Finance:** Searches current financial information about a company.
- **Internet Explorer:** Displays Bing.com search engine and searches on the word or term you enter.
- **Mail:** Searches your e-mail account for messages containing the search criteria.
- **Maps:** Displays the Maps app and searches for the location you specify.
- **Music:** Searches the Music app for music stored on your computer and available through the Music Marketplace. Through the Marketplace, you can preview and purchase songs.
- **Photos:** Searches the Photos app for photos matching your search criteria.
- **Store:** Displays the Windows Store and returns apps that meet your search criteria. You can click an app to learn more about it. If you like it, you can download it to your computer.
- **Video:** Displays the Video app and returns videos based on the search criteria you enter.
- **Weather:** Displays the Weather app and returns weather information and forecasts about the location you specify.
- **Xbox Companion:** Displays the Microsoft Xbox Companion app to search using an Xbox 360 console.
- **Xbox LIVE Games:** Displays the Microsoft Xbox LIVE Games marketplace to enable you to search Xbox LIVE content.

As soon as you type one character, the search results appear on the Search screen to the left of the Search box. Each character you type reduces the search results to include only items that contain those letters. You get instant feedback as you type. So you can just keep typing as many characters as necessary until you see the item you want. To search within a category, such as Music, click that category after you type in a few letters.

An example of a search result for apps matching the word “productivity” is shown in Figure 29.2. The Windows Store appears with apps that match your search criteria.

FIGURE 29.2

Results of searching for “productivity” apps in the Windows Store


Results for “productivity
Home
All categories
All prices
Sort by relevance
Mail, Calendar, People, and Mes...
★★★★★ Productivity
Free
mSecure
★★★★★ Productivity
Free
SkyDrive
★★★★★ Productivity
Free
Soluto M
★★★★★ Productivity
Free
Evernote
★★★★★ Productivity
Free
Vodafone Mobile Broadband
★★★★★ Productivity
Free
Docstoc Premium
★★★★★ Productivity
Free
Store
productivity
Apps
Settings
Files
Store
Finance
Maps
Internet Explorer
Mail
Music
People

When conducting searches in Windows 8, the searches do not look exclusively at file and folder names. Rather, they look at the contents of files, tags, and properties as well. We talk about what those things are in Chapter 30. We mention it here in case you’re wondering why some of your recent search results include search criteria not necessarily found in the names of files or folders. For example, you might search on the term “money” and the files and folder that display as a result do not have the word “money” in them. It’s because the word “money” appears within the message or contact’s information.

You can do many things with the search results, as follows:

- To open an item, click it.
- To see other things you can do with an item, right-click it.
- If an item you were expecting to find doesn't show up, or if you want to improve the search, redo the search with other criteria.
- To discard the search results, press Esc or choose something else from the Charms Bar.

You can do wildcard searches from the Start menu, where * stands for any characters and **?** stands for a single character. But do keep in mind that when you search from the Search box, you're only searching the index, not the entire hard disk. So don't be too surprised if some files don't show up.

You can also do **AND** and **OR** searches from the Start menu. For example, a search for **`*.jpg OR *.jpeg`** finds files that have either a `.jpg` or `.jpeg` extension. I talk about these kinds of searches in more detail in this chapter and the next.

Customizing Windows search

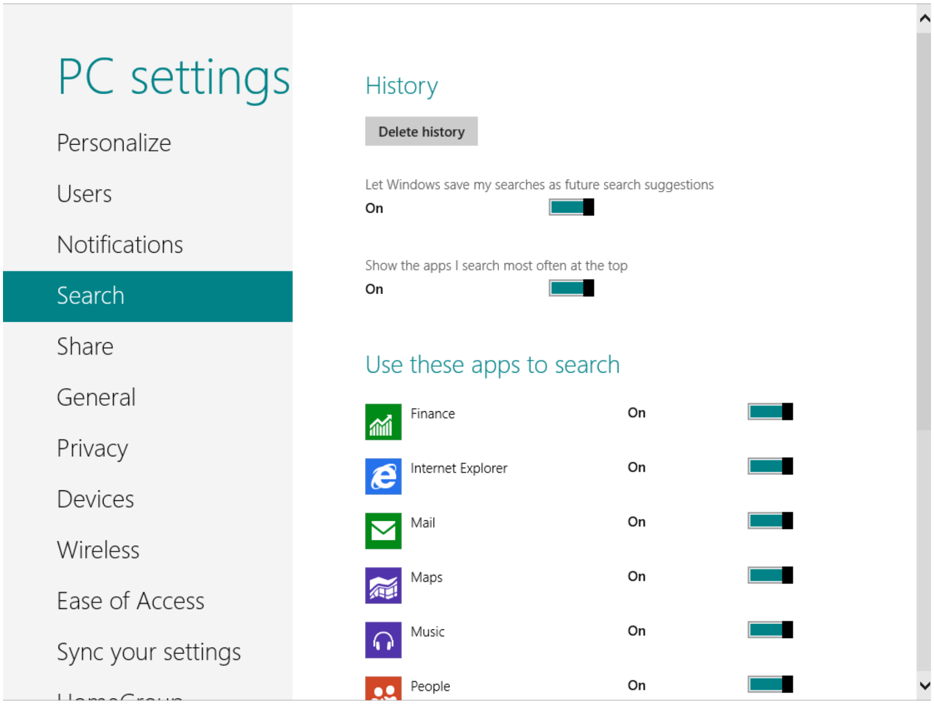
You can customize Windows Search to store a history of your searches, show the most popular searched apps at the top of the search list, and to include or exclude certain apps to search.

To set these options, you open the PC Settings window by choosing the Settings item from the Charms Bar and then choosing the More PC Settings link. Once on the PC Settings window, click Search. You have the following options, as shown in Figure 29.3:

- **Delete History:** Click the Delete History button to remove previous search results.
- **Let Windows Save My Searches As Future Search Suggestions:** Specifies that Windows should save your searches.
- **Show The Apps I Search Most Often At The Top:** Specifies that your most often search apps appear at the top of the Search list.
- **Use These Apps To Search:** Enables you to turn off or turn on specific apps you want to use during searches. By default, all apps that can be used in searches are turned on.

FIGURE 29.3

Search setting options



PC settings

- Personalize
- Users
- Notifications
- Search
- Share
- General
- Privacy
- Devices
- Wireless
- Ease of Access
- Sync your settings

History

Delete history

Let Windows save my searches as future search suggestions
On

Show the apps I search most often at the top
On

Use these apps to search

Finance	On
Internet Explorer	On
Mail	On
Maps	On
Music	On
People	On

Extending a Start menu search

If the thing you're looking for doesn't show up in your search, first check your spelling. Make sure the word you're searching for matches something on your computer. For example, if you're looking for photos of your dog named Spot, a search for "Spot" won't find them unless the photos have Spot in the filename, tags, or properties.

Search box searches are ideal for finding the kinds of things most people use most often — apps, music, programs, folders, Control Panel dialog boxes, favorite websites, messages, and documents (text, worksheets, pictures, music, and videos). If you're a quick typist, using the Search box can save you a lot of time you'd otherwise spend clicking and opening things through the traditional methods. But Search box searches aren't the end of the story. Not by a long shot. There's much more, as you'll see.

TIP

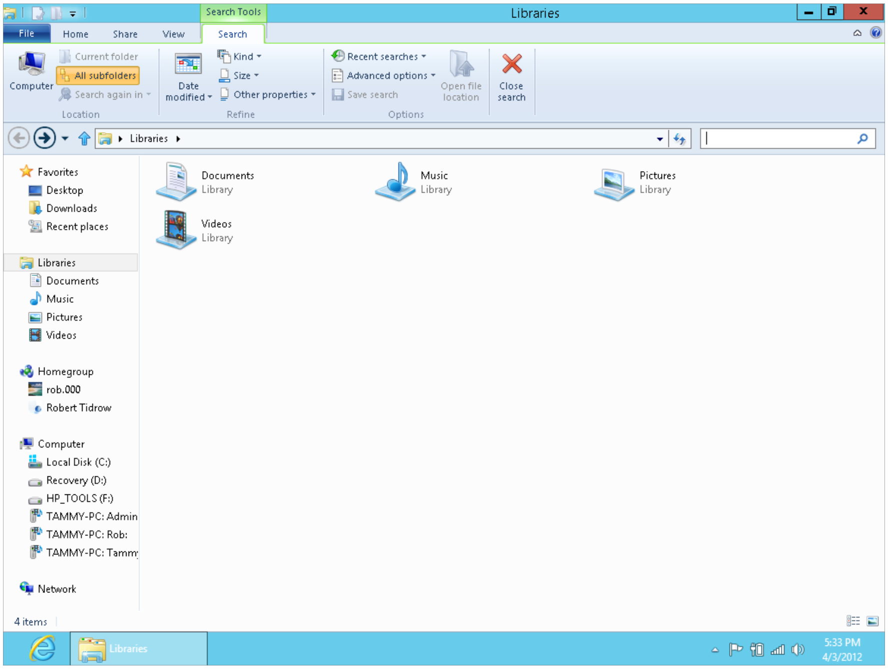
The Search box in File Explorer's upper-right corner provides a quick and easy way to search the current folder and its subfolders.

Searching Folders and Views

By now you may have noticed File Explorer has a Search box in its upper-right corner. The Search box, by default, includes text that describes the search context, such as Search Libraries, as in Figure 29.4.

FIGURE 29.4

Search box in Explorer (all folders)


Search Tools
Libraries
File
Home
Share
View
Search
Computer
Current folder
All subfolders
Search again in
Location
Date modified
Kind
Size
Other properties
Refine
Recent searches
Advanced options
Save search
Open file location
Close search
Options
Libraries
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
TAMMY-PC: Admin
TAMMY-PC: Rob:
TAMMY-PC: Tammy
Network
Documents
Library
Music
Library
Pictures
Library
Videos
Library
4 items
Libraries
5:33 PM
4/3/2012

Like the Search box on the Charms Bar, the one in File Explorer gives you instant keystroke-by-keystroke search results. With Windows 8, you can search for different kinds of items from the Explorer window. You are not limited to just files and folders. You can, for example, search for music playlists, programs, recorded TV programs, tasks, and other kinds of items. The view consists of all files and subfolders you see in the main content pane, but also can be expanded to search for all subfolders. The Search box in Explorer doesn't look strictly at file and folder names either. It looks at the contents of files that contain text, tags, and other metadata. So once again, you use it in much the same way you use an Internet search engine: not just to search for a specific filename, but to search for keywords or phrases.

The Search box in Explorer works best when you have some idea where the item you're looking for is located. For example, let's say you have thousands of songs in your Music folder and its subfolders. You want to see all songs in the Jazz genre. Step 1 is to open your Music folder. Step 2 is to type the word **Jazz** into the Search box. Instantly, you see all songs in the Jazz genre. To ensure you are searching all the subfolders, click the All Subfolders option on the Search Tool tab of File Explorer.

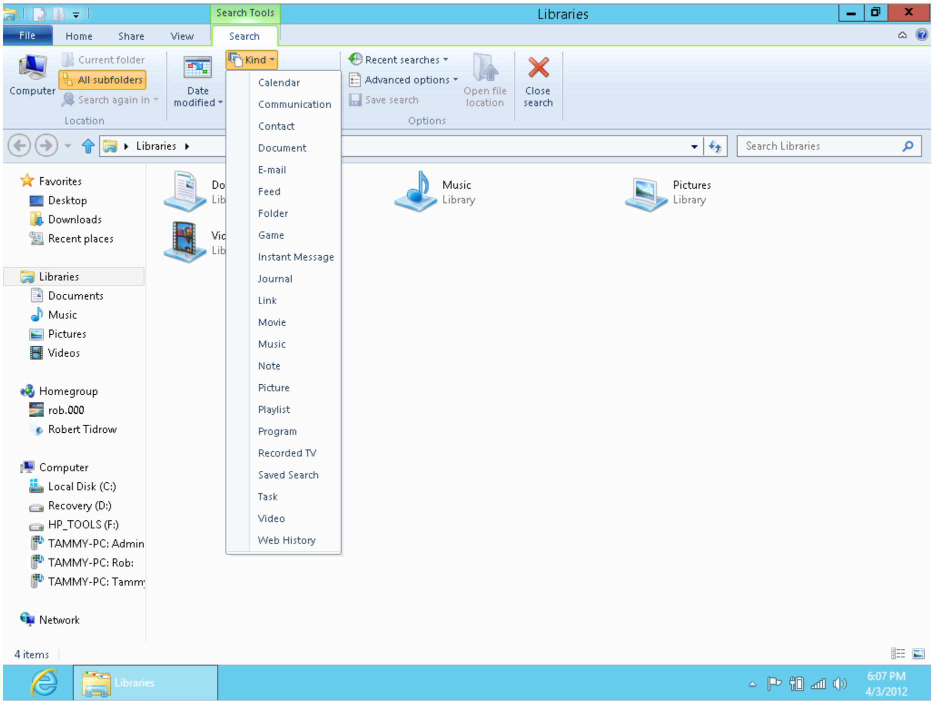
You certainly aren't limited to searching a genre. You can type an artist's name to see all songs by that artist. You can type a few characters from a song title. Basically, you can type anything you want to find whatever it is you're looking for. Just keep in mind that you're searching only the current folder or its subfolders.

When you're first learning to use the Search box in Explorer, there will be times when you don't find a file you might have been expecting to find. This might happen for several reasons:

- The file isn't in the folder you're searching (or one of its subfolders).
- The way you spelled the search term in the Search box doesn't match how it's spelled in the file(s).
- The file you were expecting to find isn't one of the file types selected from the Kind drop-down list. To see the Kind list, look at Figure 29.5.

FIGURE 29.5

You can specify the kind of file you are searching


Search Tools
Libraries
File
Home
Share
View
Search
Computer
Current folder
All subfolders
Search again in
Location
Date modified
Kind
Calendar
Communication
Contact
Document
E-mail
Feed
Folder
Game
Instant Message
Journal
Link
Movie
Music
Note
Picture
Playlist
Program
Recorded TV
Saved Search
Task
Video
Web History
Recent searches
Advanced options
Save search
Options
Open file location
Close search
Libraries
Search Libraries
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
TAMMY-PC: Admin
TAMMY-PC: Rob:
TAMMY-PC: Tamm
Network
Music
Library
Pictures
Library
4 items
Libraries
6:07 PM
4/3/2012

If you get more results than you were expecting, keep in mind the search isn't looking only at the filenames, or only at the columns you see in the results. It's searching properties that might not even be visible in the Details view and the contents of files that contain text.

Specifying search criteria

Anything you type into a Search box is a *search criterion*. Basically, the search criterion is telling Windows 8 "show me all items that have these characteristics." The "items" are things such as files, folders, music, contacts, messages, contacts, and Internet Explorer favorites.

The search criterion can be as simple as a few characters of text. For example, you can click in the Search box, type a person's name, and find whatever files and messages on your computer contain that person's name. You can also use multiple search criteria to locate items. First, let's take a look at how to perform a search using different types of search criteria.

Search by date

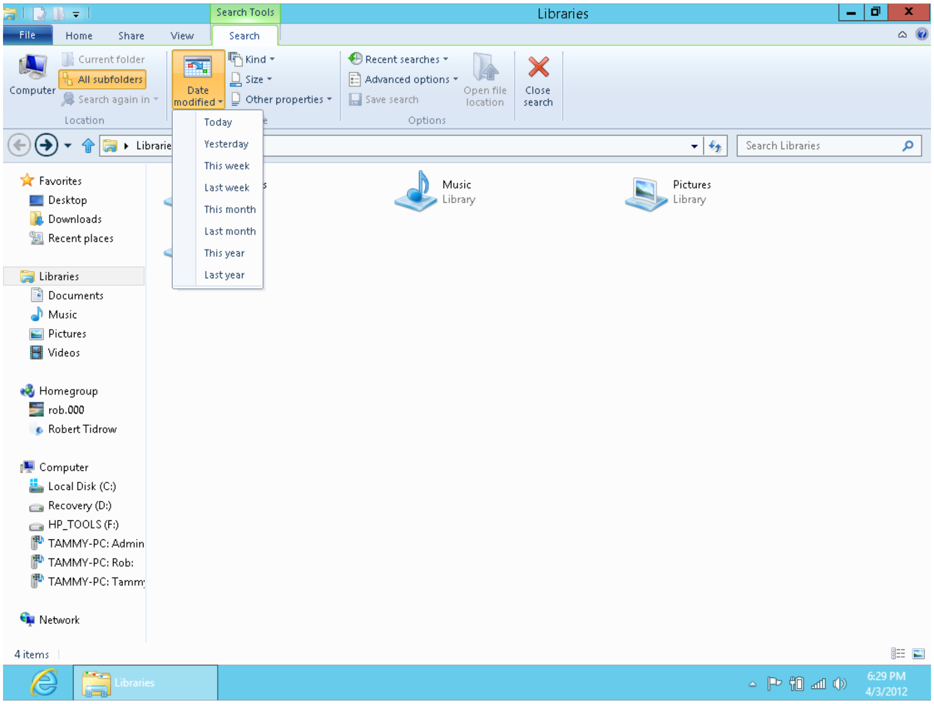
You can narrow your search to specific kinds of dates by adding a date filter to your search. For example, you can search by using the following Date Modified options (the last time you opened, changed, and saved the file):

- Today
- Yesterday
- This Week
- Last Week
- This Month
- Last Month
- This Year
- Last Year

To select a date option, click the Date Modified button on the Search tab. Figure 29.6 shows these options.

FIGURE 29.6

You can specify the modify date of files you are searching


Search Tools
Libraries
File
Home
Share
View
Search
Computer
Current folder
All subfolders
Search again in
Location
Date modified
Kind
Size
Other properties
Recent searches
Advanced options
Save search
Open file location
Close search
Options
Today
Yesterday
This week
Last week
This month
Last month
This year
Last year
Search Libraries
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
TAMMY-PC: Admin
TAMMY-PC: Rob:
TAMMY-PC: Tamm
Network
Music
Library
Pictures
Library
4 items
Libraries
6:29 PM
4/3/2012

If you are working in the Pictures folder, you can choose Date Taken from the File Explorer search box to find pictures taken (created) on a particular day or in a particular date range.

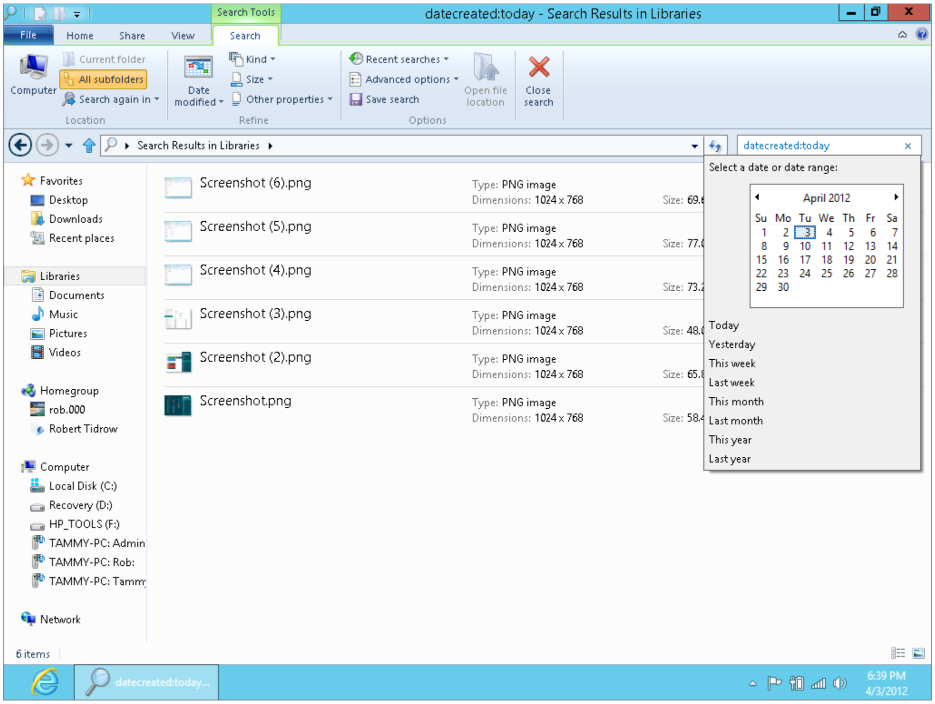
Here's an example. Click the File Explorer icon on the desktop or from the Windows 8 interface to open File Explorer. Click in the Search box and then click Date Modified from the drop-down menu that appears. You can then click a date from the date picker or click an option like Yesterday or This Month. Windows 8 then searches in your libraries for the files that meet those criteria.

Although Date Modified is the only date option available when you search at the Libraries level, it isn't the only date criteria you can use to search. For example, you can search by date created, date modified, and last accessed. If you don't see the search option you need, you can type it.

Let's say today is April 3, 2012, and you've just created or downloaded a file. Only you clicked the Save button without choosing where to put the file, and you didn't notice the name of the file. So now you don't know where it is. So, open the parent folder where you downloaded the file, click in the Search box, and type **datecreated:today** to see all files created today. That might help you find the file. When you do this, Windows 8 displays a helpful calendar tool and the set of Date Modified options in case you want to select a different date or date range. Figure 29.7 shows an example of how this works.

FIGURE 29.7

Searching a date range


Search Tools
datecreated:today - Search Results in Libraries
File
Home
Share
View
Search
Computer
Current folder
All subfolders
Search again in
Location
Date modified
Kind
Size
Other properties
Refine
Recent searches
Advanced options
Save search
Options
Open file location
Close search
Search Results in Libraries
datecreated:today
Select a date or date range:
April 2012
Su Mo Tu We Th Fr Sa
Today
Yesterday
This week
Last week
This month
Last month
This year
Last year
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
TAMMY-PC: Admin
TAMMY-PC: Rob:
TAMMY-PC: Tamm
Network
Screenshot (6).png
Screenshot (5).png
Screenshot (4).png
Screenshot (3).png
Screenshot (2).png
Screenshot.png
Type: PNG image
Dimensions: 1024 x 768
6 items
datecreated:today...
6:39 PM
4/3/2012

To search for files within a range of dates, choose one of the date criteria (like Date Modified). In the calendar that drops down, click the start or end date. Then hold down the Shift key and click the other date. Or, simply click and drag across the date range with the mouse. Both dates, and all the dates in between, are highlighted. Windows 8 displays the files that fill the criteria within that date range.

Search by size

The Size option lets you search for files that are an exact size, or files that are larger or smaller than some size. For example, let's say you bought a second hard drive and want to move some large video files to it. You could search for Size and choose the Gigantic option, which finds files larger than 128MB. Or, you can specify a particular size, such as 500MB or 1GB. To search by a specific size, click the Size option in the Search box and then type a size after the colon. Use the modifiers K for kilobyte, M for megabyte, and G for gigabyte.

NOTE
A megabyte (MB) is about 1,000KB (exactly 1,024KB). A gigabyte (GB) is about 1,000,000KB (exactly 1,048,576KB).

Search by filename or subject

In the Search box, you can type a specific filename or part of a filename. For example, a search for **sunset** finds all files that have the word "sunset" in the filename. You can use wildcard characters as in earlier versions of Windows (and DOS). Use **?** to stand for a single character, and * to stand for any group of characters. For example, let's say you have files named `Sunset (1)`, `Sunset (2)`, `Sunset (3)`, and so forth. A search for **sunset*** finds them all.

You can include filename extensions to narrow down the search. For example, a search for **.jpg** finds all files that have a `.jpg` extension. A search for **sunset*.jpg** finds all files that start with sunset and end with a `.jpg` filename extension.

You can use the word **OR** (in uppercase letters, with a space before and after the word) to extend the search to multiple criteria. For example, consider the following typed into the Filename box:

***.jpg OR *.jpeg**

When you click the Search button, you get all files that have either a `.jpg` extension or a `.jpeg` extension. Similarly, you could search for

sunset*.jpg OR sunset*.jpeg

to find all files that start with "sunset" and end with either `.jpg` or `.jpeg`.

You're not limited to just one **OR**. For example, placing the following in the Filename box

***.avi OR *.wmv OR *.mpg OR *.mpeg**

finds all files that end with `.avi`, `.wmv`, `.mpg`, or `.mpeg`.

CAUTION
Make sure you use OR, not AND. It's a common misunderstanding that we discuss under "Power Searches" in Chapter 30.

If you are searching a folder that contains e-mail messages, you can search using e-mail–specific criteria. For example, you can search for e-mail messages that have a certain word or phrase in the Subject line. There's no need to use wildcards or filename extensions because the Subject line is just text, not a filename. To search by subject, click in the Search box and type **subject:(subject text)**, where subject text is the text for which you are searching. You can also simply type the text in the Search box without the **subject:** modifier, but you will return results from matches other than in the subject of the e-mail messages. You can use other criteria such as From and To when searching for e-mail messages, as well as enter text that appears in the body of the message.

Search by kind

Windows 8 enables you to search by the type of object you want to find. For example, you can search for contacts, documents, e-mail, feeds, folders, games, and more. On the Search tab, Windows 8 displays the Kind tool (it was shown earlier in Figure 29.5). This tool enables you to choose the kind(s) of objects to search for.

TIP

To search for multiple kinds of objects, use the OR logical operator with multiple kind: specifications.

Search by tags, authors, title, and others

Depending on what type of folder you are searching in, you'll see other boxes such as Tags, Authors, or Title for specifying search criteria. These correspond to metadata stored in file properties. You can type in any word or phrase to search for files that have that word or phrase in the corresponding property. We talk more about those properties in Chapter 28.

Saving a search

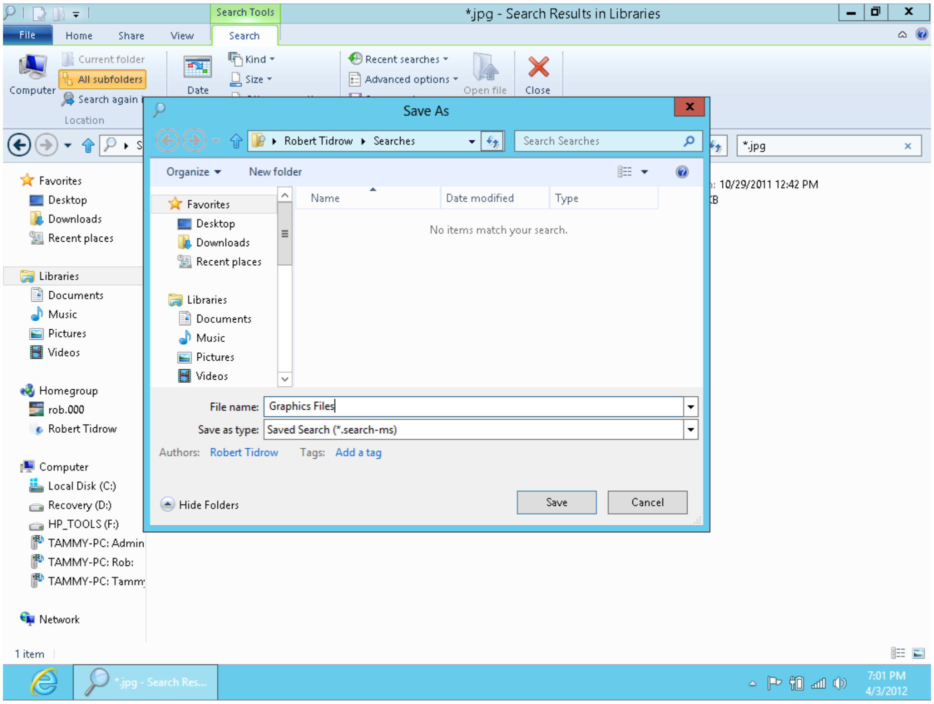
Searches can be used in two ways. In some cases you might just be looking for a file you've lost track of. In that case, once you've found the file, there's probably no need to repeat the search in the future. You can just double-click the found file to open it. Then close the Search by clicking the Close Search button on the Search tab in File Explorer.

There may be other times when you put some time into constructing a search to pull together files from multiple folders. For example, a search for ***.avi OR *.wmv OR *.mpg OR *.mpeg** shows all video files with those extensions. If you think you'll want to check up on your current video files often, it's not necessary to re-create the search from scratch each time. You can save the search. Any time you want to check up on your current video files, open the saved search. It will show you all *current* files that meet those criteria.

Saving a search is easy. After you've performed the search, you'll see a Save Search button on the Search tab. Just click that button and a Save As dialog box opens. The name of the search will reflect the search criteria you specified. But you don't need to keep that name. Type in any name that will be easy to recognize in the future. For example, Figure 29.8 shows a named search about to be saved as Graphics Files. Windows 8 suggests putting it in the Searches folder for your user account. That's as good a place as any to keep it. So don't change that unless you have some good reason.

FIGURE 29.8

Saving a search for video files


Search Tools
*.jpg - Search Results in Libraries
File
Home
Share
View
Search
Computer
Current folder
All subfolders
Search again in
Location
Date
Kind
Size
Recent searches
Advanced options
Open file
Close
Save As
Robert Tidrow ▸ Searches
Search Searches
*.jpg
Organize
New folder
Name
Date modified
Type
No items match your search.
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
TAMMY-PC: Admin
TAMMY-PC: Rob:
TAMMY-PC: Tamm
Network
Hide Folders
Save
Cancel
1 item
*.jpg - Search Res...
7:01 PM
4/3/2012

File name: Graphics Files

Save as type: Saved Search (*.search-ms)

Authors: Robert Tidrow

Tags: Add a tag

Also, Windows stores these saved searches using the Saved Search format, which is `.search-ms`. This is good to know if you ever need to look for saved searches on your system.

At the bottom of the Save As dialog box, your username is saved as the default author, but you can click that name and change it to another name or add author names. To add a tag to the saved search file, click the Add A Tag item if you like. Then click the Save button.

Using saved searches

Unless you specify otherwise, your saved searches are stored in the Searches folder for your user account. Your searches are also added to the Favorites folder. You can open the Searches folder using the following methods:

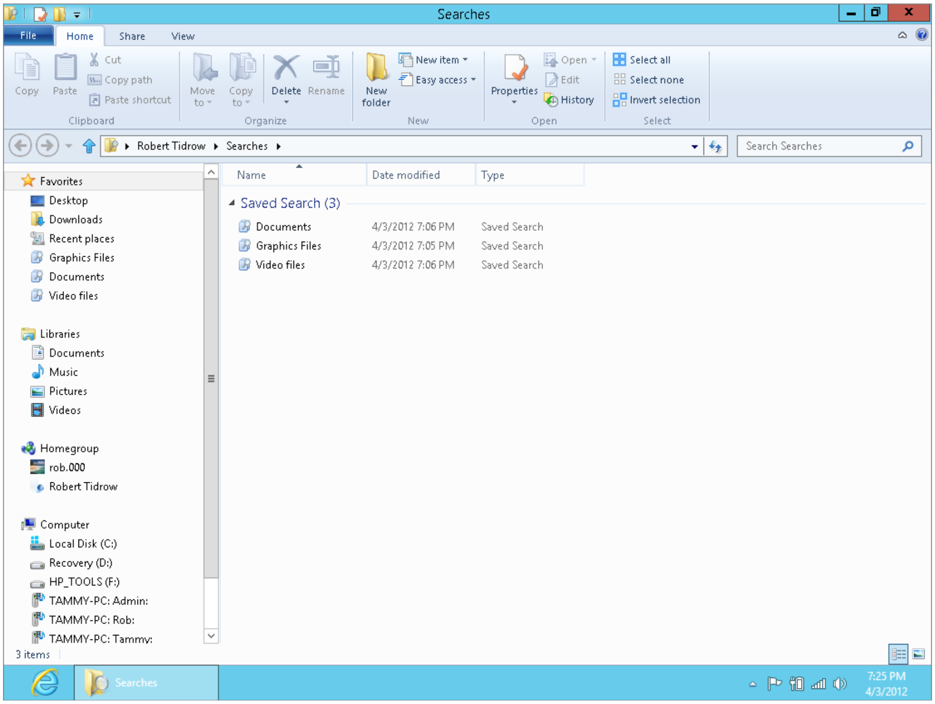
- Choose Search from the Charms Bar and type **searches** in the Search box. In the Results area, click the Searches folder.
- Open File Explorer from the Windows 8 interface or from the desktop, click your user account name, and open the Searches folder.

- If you're in a folder and the Navigation pane is open, click the saved search under Favorites.
- Choose Windows+X from the desktop, click Search, and type **searches** in the Search box. Click the Searches folder to open it.

Unless you opened a specific search, the Searches folder opens. You'll see searches you've saved yourself. Figure 29.9 shows an example.

FIGURE 29.9

Saved searches



Saved Search (3)

Name	Date modified	Type
Documents	4/3/2012 7:06 PM	Saved Search
Graphics Files	4/3/2012 7:05 PM	Saved Search
Video files	4/3/2012 7:06 PM	Saved Search

Searches
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Robert Tidrow
Searches
Search Searches
Favorites
Desktop
Downloads
Recent places
Graphics Files
Documents
Video files
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
3 items
Searches
7:25 PM
4/3/2012

To perform a saved search, just open it by double-clicking its icon. The opened search looks just like any real folder. In fact, you can treat it just as you would any folder. The only difference between a saved search and another folder is that the saved search doesn't actually contain files. The saved search is a *virtual folder* that looks and acts like a real folder. But the files you see in the saved search are still in the folder where you originally saved them. The virtual folder lets you see all the files that match the search criteria *as though* they were all in one folder. This allows you to work with the files as a unit, regardless of their actual physical location in folders.

A search in Windows 8 is similar to an Internet search. When you search in Windows 8, or open a saved search, you're really just looking at links to files that match the search criteria. But do be aware that when you do something to a file in the search results, you perform that action on the actual file. For example, when you delete a file from a saved search, you delete it from its actual location. Likewise, if you restore that file from the Recycle Bin, you restore it back to its original location.

Wrap-Up

You have many ways to find things in Windows 8. The primary method includes typing a word in the Search box on the Search page to find items that contain that word, or searching in File Explorer using a wide range of criteria.

Each box is similar to a mini search engine for finding documents and messages based on content, properties, tags, or name. By default, only items in your user account are searched. If you want to include more items in those searches, see Chapter 30.

Here's a quick review of the main points covered in this chapter:

- Windows 8 has a built-in index of programs, files, folders, and messages in your user account. When you search the index, you get keystroke-by-keystroke results.
- To search from the Windows 8 interface or the Windows desktop, choose Search from the Charms Bar. Then start typing your search text.
- To search for a file when you know its general location, open the folder or a parent folder of the item. Then use the Search box in Explorer's upper-right corner to search.
- You can specify multiple criteria in both the Search box and in File Explorer by entering search keywords such as date modified, subject, size, and others, followed by a colon and the search parameter. You can combine multiple criteria in a single search.
- To save a search for future use, click Save Search on the Search tab of File Explorer.
- To reuse saved searches, click Search from the Charms Bar, type **searches** in the Search box, and click the Searches folder. Or click Searches under Favorites (if available) in the Navigation pane of any folder.

If you frequently use files that are outside of your user account folders, see Chapter 30 for info on adding those folders to your search index.

CHAPTER 30

Metadata and Power Searches

IN THIS CHAPTER

- Working with file properties
- Adding and changing properties
- Adding locations to your search index
- Customizing the search index
- Implementing power searches

Chapter 29 covered different ways you can search your computer. When you search for files, you actually search an index of filenames and properties. The index isn't something you see on the screen. Nor do you have to do anything to create or update the index. Windows 8 takes care of all the details automatically and behind the scenes. The beauty of the index is that it allows Windows 8 to find things much more quickly than it could without the index.

The information about files that's in the index comes from each file's properties. Those properties are sometimes referred to as *metadata* because they're different from the file's content. The file's content is what you see on the screen when you open the file. The file's properties are stored in the file and are visible from the file's Properties sheet.

Properties provide a way of organizing files that goes beyond their physical location in folders. This is a great help to people who have many files to manage because sometimes a simple folder name and filename just aren't enough. Sometimes you want to see all files based on authorship, date created, tags, subject, or even comments you've jotted down about the file. In other words, you want to pull together and work with files in a way that transcends their physical locations in folders. Metadata in Windows 8's indexed searches allows you to do that quickly and easily.

TIP
You can view file metadata in File Explorer's Details pane.

Working with File Properties

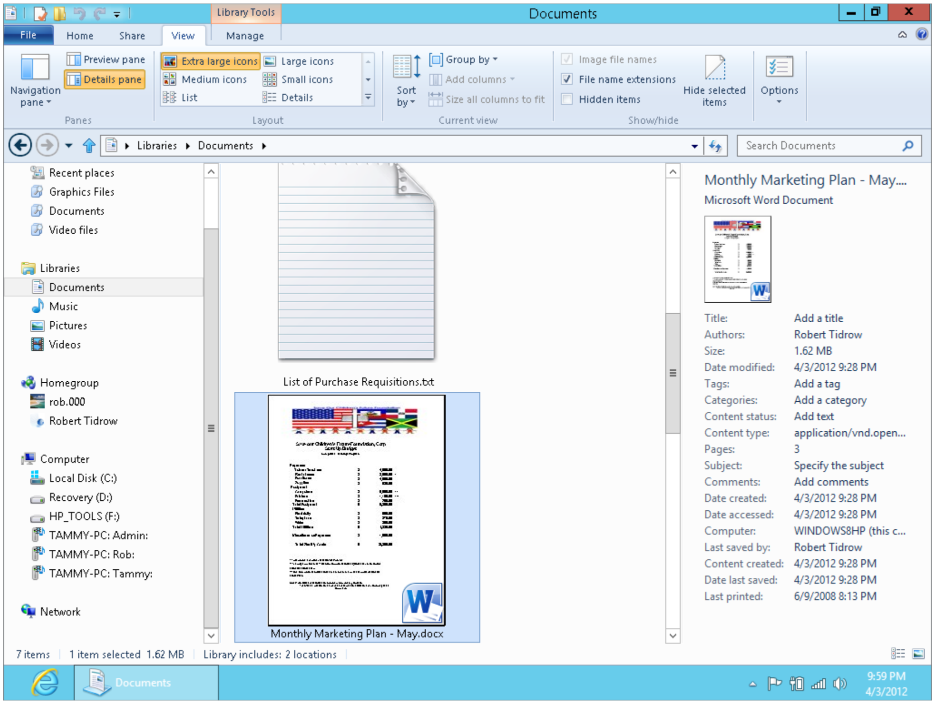
Taking a wild guess, I'd say you can put several thousand different types of files on a PC. No one person needs them all or uses them all. Some file types are so esoteric that you might never come across one. Some of those file types support the use of *properties*, some don't.

In File Explorer, you can view and edit a file's properties in many ways. One way is to open the folder in which the file is contained and then select the file's icon. The Details pane, if open, displays the file's properties. If the Details pane isn't open, click the View tab and click the Details Pane button.

Initially, the Details pane might be too short to show all the file's properties, but you can drag its top border upward to see more properties. Figure 30.1 shows an example displaying the properties for a Microsoft Word 2010 document. Other file types will have other properties.

FIGURE 30.1

A file's properties in the Details pane


Library Tools
Documents
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Libraries
Documents
Search Documents
Recent places
Graphics Files
Documents
Video files
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
List of Purchase Requisitions.txt
Monthly Marketing Plan - May.docx
7 items
1 item selected 1.62 MB
Library includes: 2 locations
Documents
9:59 PM
4/3/2012

Monthly Marketing Plan - May....
Microsoft Word Document

Title:	Add a title
Authors:	Robert Tidrow
Size:	1.62 MB
Date modified:	4/3/2012 9:28 PM
Tags:	Add a tag
Categories:	Add a category
Content status:	Add text
Content type:	application/vnd.open...
Pages:	3
Subject:	Specify the subject
Comments:	Add comments
Date created:	4/3/2012 9:28 PM
Date accessed:	4/3/2012 9:28 PM
Computer:	WINDOWS8HP (this c...
Last saved by:	Robert Tidrow
Content created:	4/3/2012 9:28 PM
Date last saved:	4/3/2012 9:28 PM
Last printed:	6/9/2008 8:13 PM

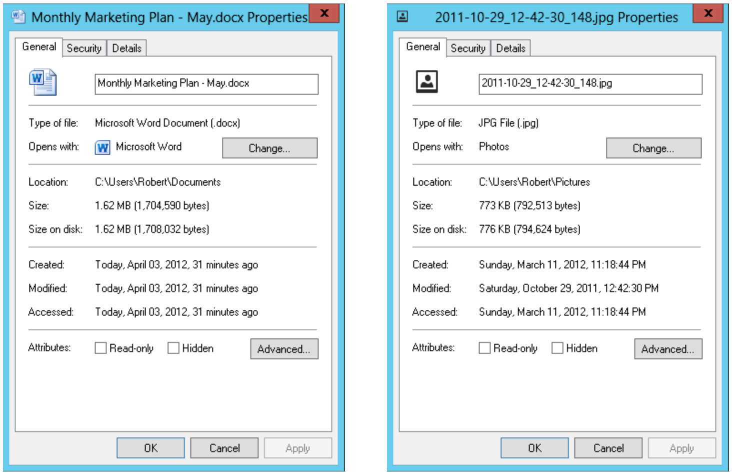
Viewing properties sheets

Here's another way to view a file's properties: Right-click the file's icon and choose Properties. A dialog box opens. If that dialog box has a Details tab, that's where you're most likely to find the kinds of properties you can create and edit. You'll often hear the term *properties sheet* used to describe that set of properties because it's kind of like a sheet of paper on which properties are written.

Figure 30.2 shows a couple of sample properties sheets. On the left is the properties sheet for the Word document shown in Figure 30.1. On the right is the properties sheet for a JPG image. When there are more properties than fit in the box, use the scroll bar at the right side of the box to see others.

FIGURE 30.2

Examples of properties sheets



Monthly Marketing Plan - May.docx Properties

Monthly Marketing Plan - May.docx
Type of file: Microsoft Word Document (.docx)
Opens with: Microsoft Word
Location: C:\Users\Robert\Documents
Size: 1.62 MB (1,704,590 bytes)
Size on disk: 1.62 MB (1,708,032 bytes)
Created: Today, April 03, 2012, 31 minutes ago
Modified: Today, April 03, 2012, 31 minutes ago
Accessed: Today, April 03, 2012, 31 minutes ago
Attributes: ☐ Read-only ☐ Hidden

2011-10-29_12-42-30_148.jpg Properties

2011-10-29_12-42-30_148.jpg
Type of file: JPG File (.jpg)
Opens with: Photos
Location: C:\Users\Robert\Pictures
Size: 773 KB (792,513 bytes)
Size on disk: 776 KB (794,624 bytes)
Created: Sunday, March 11, 2012, 11:18:44 PM
Modified: Saturday, October 29, 2011, 12:42:30 PM
Accessed: Sunday, March 11, 2012, 11:18:44 PM
Attributes: ☐ Read-only ☐ Hidden

Every property has a name and a *value*. The value is some text, date, or number that's assigned to the property. In the properties sheets, the property names are listed down the left column. The value assigned to each property (if any) appears to the right of the property name.

Viewing properties in columns

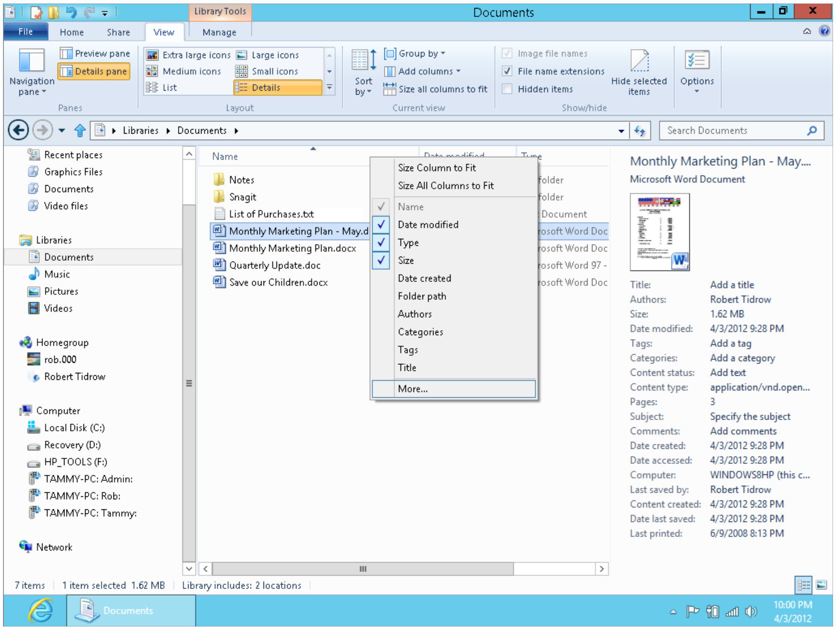
Yet a third way to view properties is through the Details view in File Explorer. In any folder (including the results of a search), click the Views tab and choose Details. You'll see a few columns across the top of the contents pane. But what you see isn't necessarily all there is. The horizontal scroll bar across the bottom of the pane lets you scroll to other columns. You can also add columns to the view (or remove columns) by right-clicking any column heading, as in Figure 30.3. The menu that appears shows a few other columns from which you can choose. Click More at the bottom of that menu to see others.

TIP

See Chapter 27 for information on choosing, moving, and sizing columns in the Details view.

FIGURE 30.3

Choosing columns in Details view


Library Tools
Documents
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Options
Show/hide
Libraries ▸ Documents ▸
Search Documents
Recent places
Graphics Files
Documents
Video files
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
Name
Date modified
Type
Notes
Snagit
List of Purchases.txt
Monthly Marketing Plan - May.d
Monthly Marketing Plan.docx
Quarterly Update.doc
Save our Children.docx
Size Column to Fit
Size All Columns to Fit
✓ Name
✓ Date modified
✓ Type
✓ Size
Date created
Folder path
Authors
Categories
Tags
Title
More...
10:00 PM
4/3/2012

Monthly Marketing Plan - May....
Microsoft Word Document

Title: Add a title
Authors: Robert Tidrow
Size: 1.62 MB
Date modified: 4/3/2012 9:28 PM
Tags: Add a tag
Categories: Add a category
Content status: Add text
Content type: application/vnd.open...
Pages: 3
Subject: Specify the subject
Comments: Add comments
Date created: 4/3/2012 9:28 PM
Date accessed: 4/3/2012 9:28 PM
Computer: WINDOWS8HP (this c...
Last saved by: Robert Tidrow
Content created: 4/3/2012 9:28 PM
Date last saved: 4/3/2012 9:28 PM
Last printed: 6/9/2008 8:13 PM

7 items | 1 item selected 1.62 MB | Library includes: 2 locations

Editing properties

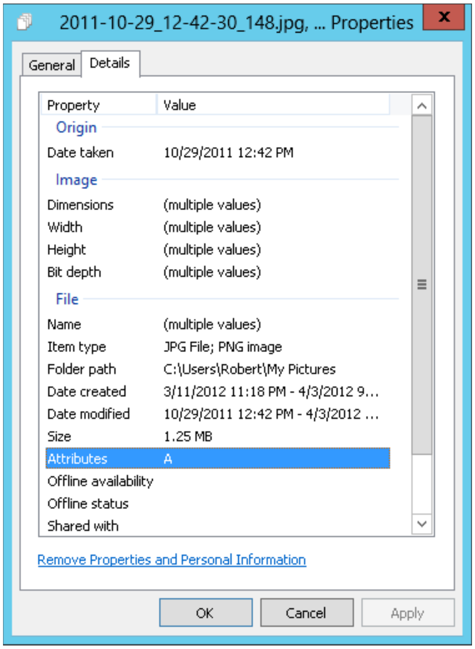
To change a file's properties, select its icon and make your changes in the Details pane. Or right-click the file's icon, choose Properties, click the Details tab, and make your changes there.

You can change properties for multiple files using the same basic method. You just have to select the icons for the files first. But there is a catch. You'll be limited to changing properties that all the selected files have in common. This can be a real pain when you're working with multiple file types. For example, many different types of files for storing pictures exist — JPEG, TIFF, PNG, BMP, and GIF to name a few. The newer file types — JPEG, TIFF, and PNG — offer many properties. The older file types, BMP and GIF, offer relatively few.

Figure 30.4 shows an example of what can happen when you select multiple file types. We've selected all the icons in the folder, each of which is a picture. Then, we right-clicked one of them, chose Properties, and clicked the Details tab. Hardly any properties are showing because all those different file types have few properties in common.

FIGURE 30.4

Properties for multiple files of different types


2011-10-29_12-42-30_148.jpg, ... Properties
General
Details
Remove Properties and Personal Information
OK
Cancel
Apply

Property	Value
Origin	
Date taken	10/29/2011 12:42 PM
Image	
Dimensions	(multiple values)
Width	(multiple values)
Height	(multiple values)
Bit depth	(multiple values)
File	
Name	(multiple values)
Item type	JPG File; PNG image
Folder path	C:\Users\Robert\My Pictures
Date created	3/11/2012 11:18 PM - 4/3/2012 9...
Date modified	10/29/2011 12:42 PM - 4/3/2012 ...
Size	1.25 MB
Attributes	A
Offline availability	
Offline status	
Shared with	

With old file types that support few properties, about the only thing you can do is convert them to newer file types. For example, you might have a lot of GIF images on your system when you installed Windows 8. That file type doesn't offer any really usable properties. to resolve this you can use the batch conversion feature of your graphics program (Paint Shop Pro) to convert them all to PNG files. We suggest PNG because it supports transparency like GIF does.

NOTE

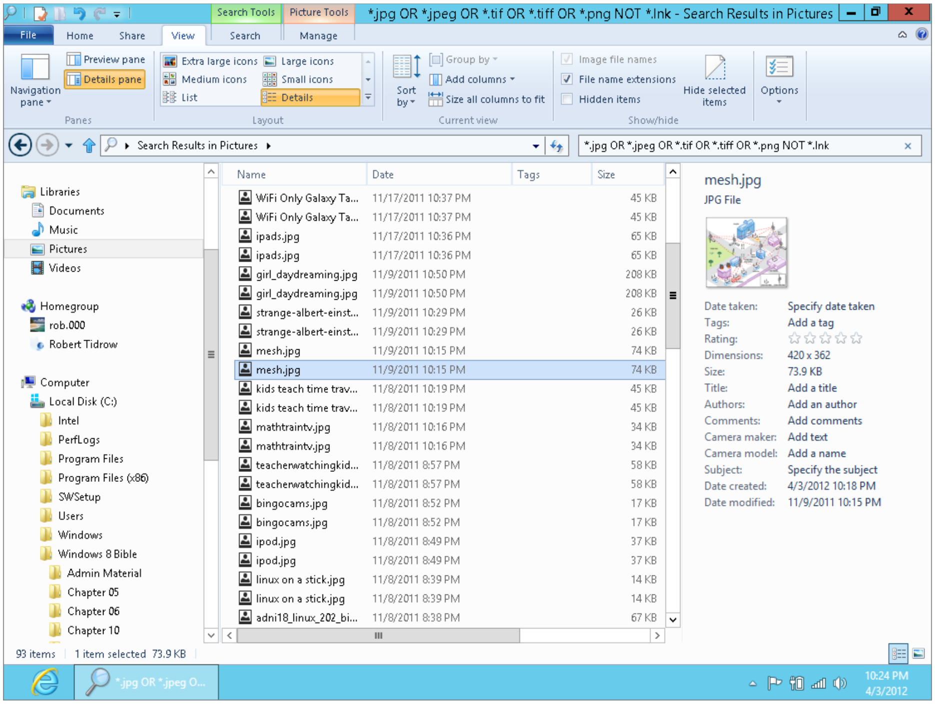
PNG does not support animation, so you may not want to convert animated GIFs to PNG.

If you have many files that you want to assign new properties to, you might consider creating a search that brings similar files together all under one roof, so to speak. Open the Libraries folder (or other folder that is a parent of the one you want to search) and click in the Search box to specify the types of files you want to work with. In Figure 30.5, we typed the following into the Filename box:

```
*.jpg OR *.jpeg OR *.tif OR *.tiff OR *.png NOT *.lnk
```

FIGURE 30.5

Specify the types of files in the Search box


Search Tools
Picture Tools
*.jpg OR *.jpeg OR *.tif OR *.tiff OR *.png NOT *.lnk - Search Results in Pictures
File
Home
Share
View
Search
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Search Results in Pictures
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Intel
PerfLogs
Program Files
Program Files (x86)
SWSetup
Users
Windows
Windows 8 Bible
Admin Material
Chapter 05
Chapter 06
Chapter 10
93 items
1 item selected 73.9 KB
*.jpg OR *.jpeg O...
10:24 PM
4/3/2012

*.jpg OR *.jpeg OR *.tif OR *.tiff OR *.png NOT *.lnk

Name	Date	Tags	Size
WiFi Only Galaxy Ta...	11/17/2011 10:37 PM		45 KB
WiFi Only Galaxy Ta...	11/17/2011 10:37 PM		45 KB
ipads.jpg	11/17/2011 10:36 PM		65 KB
ipads.jpg	11/17/2011 10:36 PM		65 KB
girl_daydreaming.jpg	11/9/2011 10:50 PM		208 KB
girl_daydreaming.jpg	11/9/2011 10:50 PM		208 KB
strange-albert-einst...	11/9/2011 10:29 PM		26 KB
strange-albert-einst...	11/9/2011 10:29 PM		26 KB
mesh.jpg	11/9/2011 10:15 PM		74 KB
mesh.jpg	11/9/2011 10:15 PM		74 KB
kids teach time trav...	11/8/2011 10:19 PM		45 KB
kids teach time trav...	11/8/2011 10:19 PM		45 KB
mathtraintv.jpg	11/8/2011 10:16 PM		34 KB
mathtraintv.jpg	11/8/2011 10:16 PM		34 KB
teacherwatchingkid...	11/8/2011 8:57 PM		58 KB
teacherwatchingkid...	11/8/2011 8:57 PM		58 KB
bingocams.jpg	11/8/2011 8:52 PM		17 KB
bingocams.jpg	11/8/2011 8:52 PM		17 KB
ipod.jpg	11/8/2011 8:49 PM		37 KB
ipod.jpg	11/8/2011 8:49 PM		37 KB
linux on a stick.jpg	11/8/2011 8:39 PM		14 KB
linux on a stick.jpg	11/8/2011 8:39 PM		14 KB
adni18_linux_202_bi...	11/8/2011 8:38 PM		67 KB

mesh.jpg
JPG File

Date taken:	Specify date taken
Tags:	Add a tag
Rating:	☆☆☆☆☆
Dimensions:	420 x 362
Size:	73.9 KB
Title:	Add a title
Authors:	Add an author
Comments:	Add comments
Camera maker:	Add text
Camera model:	Add a name
Subject:	Specify the subject
Date created:	4/3/2012 10:18 PM
Date modified:	11/9/2011 10:15 PM

That brings together all the TIFF, JPEG, and PNG files in the search scope, and omits any shortcuts (`.lnk` files). (The `.lnk` files won't have many editable properties either.) Perform the search and then use column headings to sort items based on their current folder location. You can also add columns that allow you to see the properties you intend to work with. Of course, that's just an example. You can set up searches to find and organize things as you see fit.

Save the search when you're done so you can open and use it whenever you have time to work with properties. To change properties for any single file, click its name. To assign the same property value to multiple files, select their icons. Then use the Details pane or properties sheet to make your changes. It will take some time if you have a number of files to work with. But having all the files together in one place, and the properties of interest in plain view, can make the job less daunting.

TIP

Windows 8's Save As dialog box offers tools for entering metadata (such as tags) when you save a file.

Setting Properties When You Save

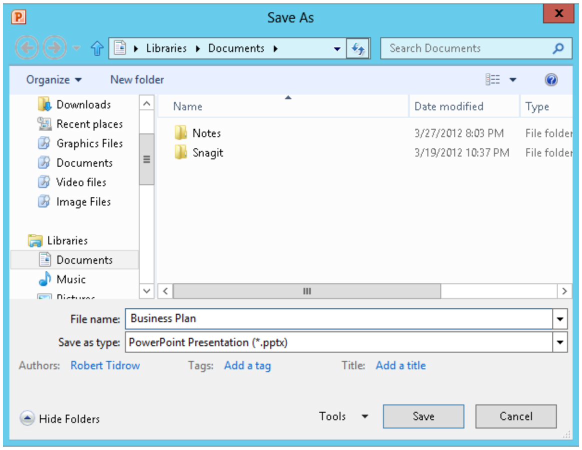
Search indexes are nothing new. Database administrators have been using them for decades. Every time you do an Internet search, you're actually searching an index of websites somewhere. Windows XP and other operating systems allow for some limited, indexed searching through add-on programs. But Windows Vista was the first Windows version to have indexed searching — its own built-in search engine — built in from the ground up. Windows 7 expanded upon and improved the search capabilities introduced in Vista. Windows 8 continues the search capabilities with the capabilities to search Windows apps, the Windows Marketplace, Xbox LIVE, and Xbox Companion areas from within Windows. Other software developers understand the value of that. As the years roll by, new versions of old programs will include the ability to tag files and set properties at the moment you first save the program. In addition, the relationship of the desktop environment to the online environment is much tighter and more seamless with Windows 8.

When you save a new file, be sure to look around for any options in the Save As dialog box that allow you to add tags or properties. Figure 30.6 shows an example of the Save As dialog box for a Microsoft PowerPoint 2010 document. As you can see, the dialog box allows you to add tags and authors right on the spot.

When you're faced with such options, think about words you might want to type into a Search box to find the file in the future. Ask yourself, "If I need this thing six months from now and forget its filename, what word might I use to search for it?" or "How should I categorize this file in relation to other similar kinds of documents?" As your collection of files grows, and your searching skills grow, the few moments you spend thinking up keywords for tags and properties will pay off in spades.

FIGURE 30.6

Save As dialog box for PowerPoint 2010



Save As
Libraries ▸ Documents ▸
Search Documents
Organize ▾
New folder
Downloads
Recent places
Graphics Files
Documents
Video files
Image Files
Libraries
Documents
Music
Pictures
Name
Date modified
Type
Hide Folders
Tools ▾
Save
Cancel

Name	Date modified	Type
Notes	3/27/2012 8:03 PM	File folder
Snagit	3/19/2012 10:37 PM	File folder

File name: Business Plan

Save as type: PowerPoint Presentation (*.pptx)

Authors: Robert Tidrow Tags: Add a tag Title: Add a title

TIP

You have many options for personalizing and configuring Windows 8's Search tools.

Personalizing Searches

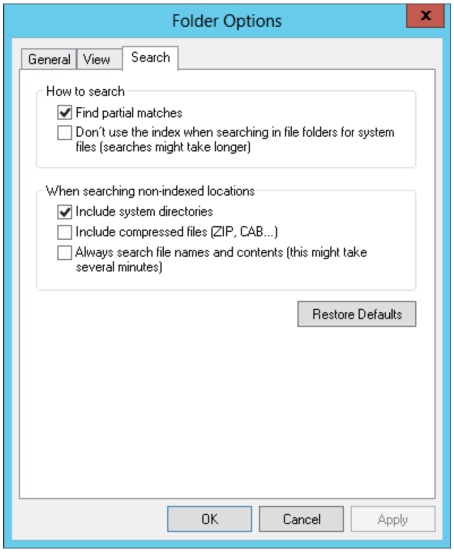
Getting the most from Windows 8's searches includes knowing how to tweak its settings to work in ways that support the kinds of things you do. You can tweak some aspects of indexed searches through the Folder and Search Options dialog box. To get to the search options, do any of the following:

- If you're in a folder, click the View tab and click the Options button.
- Choose Search from the Charms Bar, type **fol** in the Search box, click the Settings category, and then click Folder Options in the Search Results area.

The Folder Options dialog box opens. Click the Search tab to see the options shown in Figure 30.7.

FIGURE 30.7

Search options



How to search

☑ Find partial matches

☐ Don't use the index when searching in file folders for system files (searches might take longer)

When searching non-indexed locations

☑ Include system directories

☐ Include compressed files (ZIP, CAB...)

☐ Always search file names and contents (this might take several minutes)

TIP

If some files aren't showing up in your searches because they're not in your user account folders, these options really won't help. Better to extend the index to include those files. We talk about how you do that in the next section.

The Find Partial Matches option, when selected, lets you type a few characters into the Search box and still get a match. For example, let's say you have numerous files with the name Sarah in the filename, Artist name, or other property. When you type **sar** into the Search box, you see those items that contain "Sarah." But if you clear the Find Partial Matches checkbox, it won't work that way. You wouldn't see items that contain Sarah until you type all five characters, **sarah**.

The Don't Use The Index When Searching In File Folders For System Files (searches might take longer) option applies when you search non-indexed locations. When you select that option, searches outside the index work like non-indexed searches from older Windows versions. The search looks at every file in every folder and doesn't even look at the search option. When you leave that option unselected, the search still uses the index for files in indexed locations. So that part of the search goes quickly. Then it falls back to the old non-indexed method, but only for files that aren't indexed.

The last three options apply only when you're searching non-indexed locations. Choose Include System Directories if you want non-indexed searches to include Windows and other program files that are essential to proper functioning of your PC. These are not files you normally open or modify yourself. So it would make sense to choose this option only if you're a power user or administrator who needs frequent access to files in those locations. Otherwise you're just slowing down your searches for no good reason.

Choosing the Include Compressed Files (ZIP, CAB…) option extends the search into compressed Zip folders and the like. (CAB files are known as "cabinet" files and they are compressed as well.) Typically, people only use those for *archived* files that they don't use often because the compression and decompression add some time overhead to opening and closing the files. Including their contents in searches can also slow down searches. But if you want to include those files' contents in your non-indexed searches, just select the check box.

The option Always Search File Names And Contents (This Might Take Several Minutes) — forces searches to look at the contents of non-indexed files, which can really slow things down. Better to index the non-indexed document files to get the speedier index searches.

As always, clicking Restore Defaults sets all options back to their original defaults. Those are the options that provide the best performance for indexed searches and cover the things most people would typically want included in their searches.

Managing the Search Index

To get the best performance and value from the search index, you want to make sure it includes all of the files you regularly use in your work. But you don't want to go overboard and also include files you never, or rarely, use. If you do, you're forcing Windows to search through thousands of filenames and properties for no good reason. By default, Windows 8 maximizes the search index by including messages and documents from a limited number of folders.

TIP

Some indexing settings can be changed by regular users. Advanced settings can only be changed by a user with administrative rights. Of course, many people use multiple hard disks to store their files. If you want to include files from other drives and folders, you'll need to add them to your search index. But do exercise some discretion. The larger the index, the more overhead involved in maintaining the index and the slower things go. Don't add a folder to the index if it contains a bunch of non-document files or files you don't open and use regularly.

What's with the Offline Files?

Offline files are files that primarily exist on some other computer. You use Sync Center, described in Chapter 46, to copy them to and from a portable notebook in a way that prevents the copies on your computer from becoming out of sync with copies on the main computer. The files are included in the search index, by default, because they're usually documents. And the search index is all about finding and opening documents quickly.

You can exclude offline files from the search index just by clearing the check box in the Indexed Locations dialog box. Any user can do that; administrative privileges aren't required. If you don't use offline files, there's no overhead to leaving that option selected. After all, if you don't use offline files, the folder is empty. It takes no time at all to index an empty folder.

Adding indexed locations

Windows 8 indexes certain folders by default. You can add or remove locations through the Indexing Options dialog box (see Figure 30.8) with the following steps:

1. Open the Indexing Options item from the Control Panel to open the Indexing Options dialog box.
2. Click Modify.
3. Expand drives and folders, as necessary, to get to the folder(s) you want to add. Use white triangles to expand, black triangles to collapse.

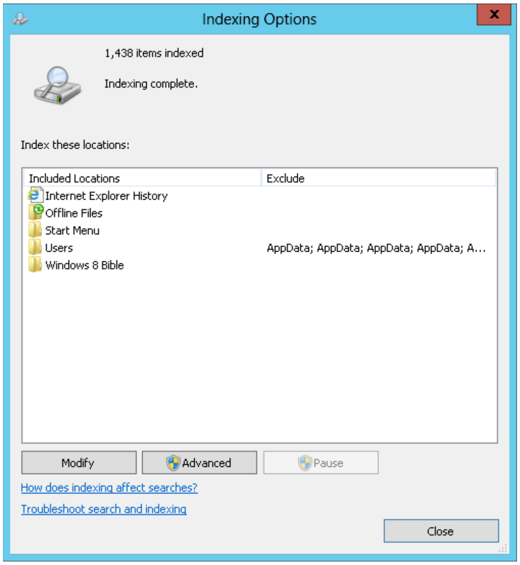
CAUTION

Items with checkmarks are already indexed. Don't clear any checkmarks unless you specifically want to remove that folder from your index. If you goof and lose track, click Cancel to leave the dialog box without saving any changes.

4. Select (check) the folder(s) you want to add. Choosing a folder automatically chooses all subfolders, so there's no need to select those individually. But you could clear the checkmark on one if you wanted to exclude it from the index. Those excluded folders will show up in the Excluded column in Indexing Options.
5. Click OK.

FIGURE 30.8

Indexing Options


Indexing Options
Modify
Advanced
Pause
How does indexing affect searches?
Troubleshoot search and indexing
Close

1,438 items indexed

Indexing complete.

Index these locations:

Included Locations	Exclude
Internet Explorer History	
Offline Files	
Start Menu	
Users	AppData; AppData; AppData; AppData; A...
Windows 8 Bible	

The folder is added to the index without any fanfare. About the only change you'll see is that the folder name appears in the Index These Locations list in Indexing Options. Use the scroll bar to the right of that list if the folder name isn't immediately visible. Also, if you look at the text near the top of Indexing Options, you'll see the number of items indexed.

If you're actively using the computer, you see a message indicating that indexing speed is reduced due to user activity. Not to worry — it just means that the index-building process is giving priority to things you want to do. This message is replaced by others when the index is being built at full speed, and when indexing is compete.

You can add as many folders as you wish, from as many drives as you wish, using those same methods. But again, prudence is a virtue. Remember, don't add folders just for the heck of it or because you don't know what's in a given folder. The more you can keep your index focused on files you want to find in searches and access through virtual folders, the better performance you'll get from the index.

TIP

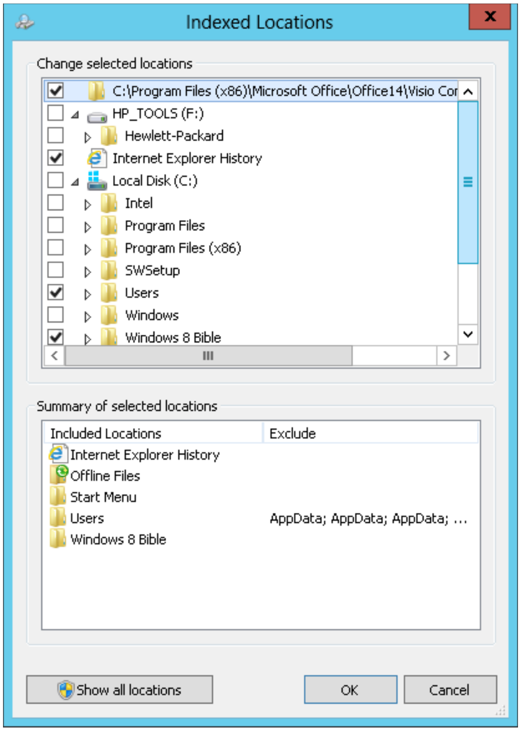
With administrative rights, you can click Show All Locations in the Indexed Locations dialog box to show additional folders that are not shown by default. These include Offline Files folders for all users, rather than just the current user. You can also view user folders for users other than yourself when you click Show All Locations.

Remove a location from the index

Removing a folder from the index is the opposite of adding one. Repeat the preceding steps to get to the Indexed Locations dialog box shown in Figure 30.9. Expand drives and folders, as necessary, so you can see the items you've selected (checked). If you want to exclude some subfolders from one of your indexed folders, expand that folder first. Then clear the checkmarks from the subfolders you don't want in the index. Those subfolders show up in the Exclude column in the lower pane of the dialog box. Click OK after making your changes.

FIGURE 30.9

The Indexed Locations dialog box



☑ C:\Program Files (x86)\Microsoft Office\Office14\Visio Cor
☐ HP_TOOLS (F:)
  ☐ Hewlett-Packard
☑ Internet Explorer History
☐ Local Disk (C:)
  ☐ Intel
  ☐ Program Files
  ☐ Program Files (x86)
  ☐ SWSetup
  ☑ Users
  ☐ Windows
  ☑ Windows 8 Bible

Included Locations	Exclude
Internet Explorer History	
Offline Files	
Start Menu	
Users	AppData; AppData; AppData; ...
Windows 8 Bible	

Choosing file types to index

The index intentionally excludes unknown file types, certain kinds of executable files, and libraries because they're not normally the kinds of things you want to locate in a quick file search or virtual folder. You can add any file type you wish to your index, and you can remove any file type you don't want to see.

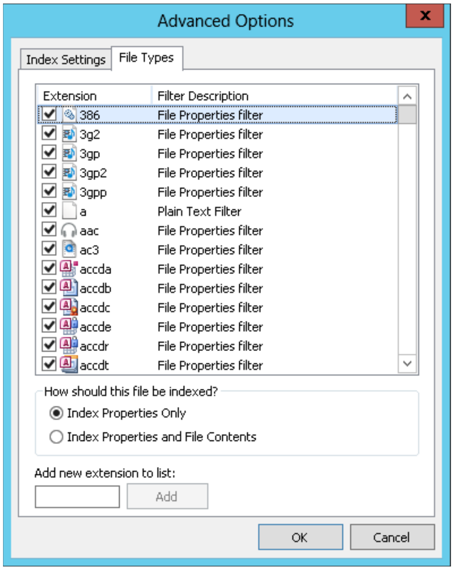
Filenames and properties of selected file types are always indexed. For files that contain text, such as word processing documents and spreadsheets, you can choose whether to index file contents. The advantage of indexing file contents is that when you search for files, the file shows up even if the search term isn't in the filename or properties. The slight disadvantage is that it adds some size to the index. But in this case, the advantage of including file contents probably outweighs the cost, unless you're using older, slower hardware and your searches are very slow.

To change options for file types, open the Indexing Options dialog box and follow these steps:

1. Click the Advanced button (enter an administrative password if prompted).
2. In the dialog box that opens, click the File Types tab. You see a list of all file extensions, as in Figure 30.10:
   - To include a file type, select its check box.
   - To exclude a file type, clear its check box.
   - If you opted to include a file type, choose whether you want to index properties only or properties and file contents.
3. To add a file extension that isn't in the list, type the extension next to the Add button and click the Add button.
4. Click OK after making your changes.

FIGURE 30.10

Choosing file types to index



Extension	Filter Description
☑ 386	File Properties filter
☑ 3g2	File Properties filter
☑ 3gp	File Properties filter
☑ 3gp2	File Properties filter
☑ 3gpp	File Properties filter
☑ a	Plain Text Filter
☑ aac	File Properties filter
☑ ac3	File Properties filter
☑ accda	File Properties filter
☑ accdb	File Properties filter
☑ accdc	File Properties filter
☑ accde	File Properties filter
☑ accdr	File Properties filter
☑ accdt	File Properties filter

How should this file be indexed?

● Index Properties Only

○ Index Properties and File Contents

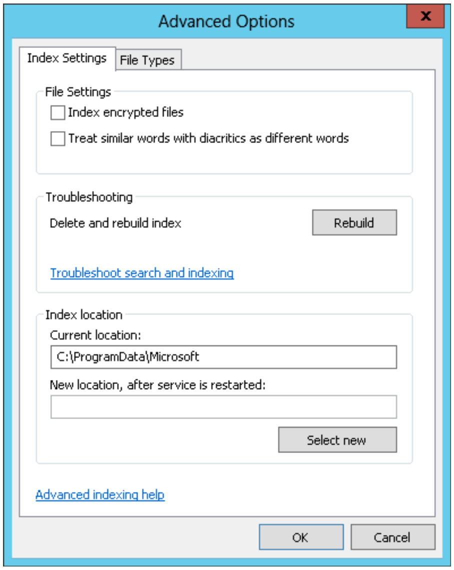
Add new extension to list:

More advanced options

You can make some more advanced tweaks to the index to change how it operates. You'll see them when you first click the Advanced button in Indexing Options. Figure 30.11 shows those advanced options on the Index Settings tab.

FIGURE 30.11

Index Settings tab



Advanced Options

File Settings

☐ Index encrypted files

☐ Treat similar words with diacritics as different words

Troubleshooting

Delete and rebuild index

Index location

Current location: C:\ProgramData\Microsoft

New location, after service is restarted:

Choosing Index Encrypted Files ensures that encrypted files are included in searches and virtual indexes. People encrypt files to keep prying eyes out. Keeping those same files out of the index adds another layer of security by making them invisible to basic file searches. But if that's not a problem for you and you want your encrypted files to show up in searches, just choose the option to index encrypted files.

A *diacritic* (or diacritical mark) is an accent mark added to a letter to change a word's pronunciation. Some examples include the acute accent (á), circumflex (³), and umlaut (ä). When used in filenames and properties, Windows 8 usually treats characters with diacritics as being identical to the character without the mark. Choosing Treat Similar Words With Diacritics As Different Words changes the search behavior so that the diacritics are no longer lumped together as though they were a single character.

The Index Location option lets you specify where you want to store the search index. The default is the `C:\ProgramData\Microsoft` folder. If you have a separate hard drive that runs faster than your C: drive, you could relocate the index to that drive for better performance. Just make sure you choose a drive that's always attached to the computer, not a removable drive. Click the Select New button and use the Browse For Folder dialog box that appears to navigate the drive and folder in which you want to store the index.

If you see error messages about a corrupt index, or the system is crashing when you try to perform a search, the problem might be a corrupted index. You can rebuild the index to see if that helps, but the process could take several hours. So if at all possible, you might consider doing this job as an overnighter. The process is simple: Just click the Rebuild button on the Index Settings tab of the Advanced Options dialog box shown in Figure 30.11.

You can continue to use the computer while the index is being rebuilt. Any searches you perform while the index is being rebuilt will likely be incomplete.

Power Searches

The ability to display the Search box, type a few characters, and see all items that contain those characters is really a great thing. For most people, it will save a lot of time otherwise spent opening programs or navigating through folders to open a program, document, contact, or message. It's so useful you might not even need to bother with more complex searches.

When you do need a more complex search, you can just use the Search box in File Explorer to search for particular types of files, and limit the search by date, filename, size, or whatever. You can create complex searches and save them. When you want to do the same search again in the future, that's handy, too. For folks who want still more, there's the query language.

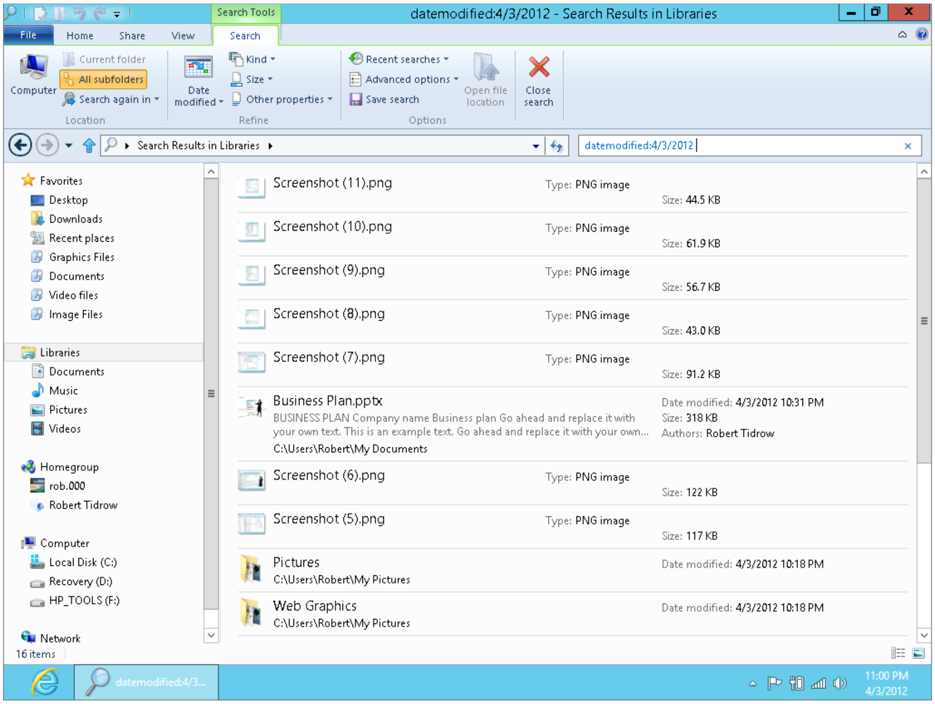
You may have noticed that after you fill in the blanks in an Advanced Search and click the Search button, you see some text in the Search box. Take a look at Figure 30.12 for an example. There the date criterion is set to Date Modified 4/3/2012. This puts the following into the Search box:

```
datemodified:4/3/2012
```

That little line of text in the Search box, called a *query*, is what's actually returning the search results. When you perform the search, Windows 8 looks through the whole index. But the query acts as a filter of sorts. Only items that meet the conditions set forth by the query show in the search results. In this example, only files whose Date Modified date is 4/3/2012 appear in the search results. Items that don't match the criterion don't appear in the search results. Those items aren't deleted or changed in any way. They're simply "filtered out" so as not to show up in the search results.

FIGURE 30.12

Sample search


Search Tools
datemodified:4/3/2012 - Search Results in Libraries
File
Home
Share
View
Search
Computer
Current folder
All subfolders
Search again in
Location
Date modified
Kind
Size
Other properties
Refine
Recent searches
Advanced options
Save search
Options
Open file location
Close search
Search Results in Libraries
Favorites
Desktop
Downloads
Recent places
Graphics Files
Documents
Video files
Image Files
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
Network
16 items
datemodified:4/3...
11:00 PM
4/3/2012

datemodified:4/3/2012

Screenshot (11).png Type: PNG image Size: 44.5 KB

Screenshot (10).png Type: PNG image Size: 61.9 KB

Screenshot (9).png Type: PNG image Size: 56.7 KB

Screenshot (8).png Type: PNG image Size: 43.0 KB

Screenshot (7).png Type: PNG image Size: 91.2 KB

Business Plan.pptx Date modified: 4/3/2012 10:31 PM Size: 318 KB Authors: Robert Tidrow
BUSINESS PLAN Company name Business plan Go ahead and replace it with your own text. This is an example text. Go ahead and replace it with your own...
C:\Users\Robert\My Documents

Screenshot (6).png Type: PNG image Size: 122 KB

Screenshot (5).png Type: PNG image Size: 117 KB

Pictures Date modified: 4/3/2012 10:18 PM
C:\Users\Robert\My Pictures

Web Graphics Date modified: 4/3/2012 10:18 PM
C:\Users\Robert\My Pictures

You can type your own queries into the Search box to perform complex searches. But, it's not as simple as "asking a question" or typing a bunch of words at random. You have to follow some rules and write the query in such a way that it can be interpreted properly. Otherwise, the search returns the wrong items, or no items at all. The sections that follow look at some ways you can type your own complex queries.

Searching specific properties

When you type a word into the search box, the results show files that contain that word in their filename, contents, and properties. For example, a search for jazz finds songs in the Jazz music genre, any folder or file that has the word **jazz** in its filename or contents, and any file that has the word "jazz" in any property. In other words, you could end up with a whole lot of files in the search results.

You can always narrow a search by specifying a property name followed by a colon and the text for which you're searching. For example, a search for `genre:jazz` finds only music files in the Jazz genre.

Similarly, a search for susan finds all files that have **susan** somewhere in the file, name, or a property, whereas a search for `from:susan` finds only e-mail messages that have the name "susan" in the From address (for a local e-mail client, not a web e-mail client).

You can assign ratings to pictures and music files, and use ratings as a search word. For example, `rating:5 stars` finds files with 5-star ratings.

Greater than and less than

When you're searching a for property that contains a date or number, you can use comparison operators shown in Table 30.1.

TABLE 30.1 **Comparison Operators Available with Search**

Operator	Meaning
=	Equal to (this is assumed if you don't specify an operator below)
>	Greater than
>=	Greater than or equal to
<	Less than
<=	Less than or equal to
<>	Does not equal

A search for `rating:>=4` stars finds pictures and music with 4- or 5-star ratings. A search for `width:<600` finds pictures with widths less than 600 pixels. The query `modified:<2007` finds files last modified in 2006 or earlier. A search for `kind:video size:<300KB` finds video files less than 300KB in size.

AND, OR, and NOT searches

You can use the keywords `AND`, `OR`, and `NOT` in searches. You must type the word in uppercase letters. Be sure to include a space before and after the word.

Not using any word is the same as using `AND`. For example, consider the following search:

```
Datemodified:5/9/2012 name:koala
```

That means the same thing as this:

```
Datemodified:5/9/2012 AND name:koala
```

Any time you create an `AND` query, you *narrow* the search results. Intuitively, you might think it would have the opposite effect. But that's not the way it works. The query is a filter. To show up in the search results, a file must meet *all* criteria posed by the filter. For example, files that don't have "koala" in the filename property won't show up at all, no matter what's in their Date Modified property. And files that were modified on dates other than 5/9/2012 won't show up either, even if they do have "koala" in the filename field.

Here's a common mistake that might help to better illustrate this:

```
filename:(*.jpg AND *.jpeg)
```

Editor: See above note. Intuitively, you might expect this search to identify files with`.jpg` and `.jpeg` extensions. But it doesn't. The result of this search is nothing! Why? Because the criterion is a filter, not a question. To get through the filter, a file needs to have a `.jpg` extension *and* a `.jpeg` extension. But a file can't have two extensions. Every file has only one filename extension. Therefore, no single file could get past this filter.

When you want to *broaden*, not narrow, a search, you use `OR`. For example, take a look at this:

```
filename:(*.jpg OR *.jpeg)
```

To get past this filter, a file needs to have either a `.jpg` or `.jpeg` extension. So the result of the search displays all files that have either a `.jpg` or `.jpeg` filename extension.

TIP

If you don't see filename extensions in search results, click the View tab and click the Options button. Then click the View tab, clear the checkmark next to Hide Extensions For Known File Types, and click OK.

By the way, you don't have to use the * and dot if you use `extension:`, `ext:`, or `type:` as the property name. For example, this search criterion also shows all files that have `.jpg` or `.jpeg` extensions:

```
ext:(jpg OR jpeg)
```

You're not limited to a single `OR`. Here's a search that shows all files that have `.avi`, `.wmv`, `.mpg`, and `.mpeg` extensions:

```
ext:(avi OR wmv OR mpg OR mpeg)
```

When you use `type:` you can use whatever appears in the Type column (in Details view) rather than the extension. For example, this search finds Microsoft Word documents:

```
type:word
```

This one finds Word documents that have the word "John" in the filename or inside the document text:

```
john AND type:word
```

Because the keyword `AND` is assumed if omitted, the following search works the same as the preceding one:

```
john type:word
```

If you want to look only at the filename and not the contents, use the `name:` property. For example, here's a query that looks for Excel spreadsheets that have the word "festival" in the filename:

```
name:festival type:excel
```

In addition to searching for extensions, you can use `kind:` to find certain kinds of files. For example, `kind:music` finds music files; `kind:picture` finds pictures; `kind:contact` finds contacts; `kind:e-mail` finds e-mail messages; and `kind:communication` finds messages and contacts.

The `NOT` keyword narrows a search by excluding items that match the criterion that follows. For example, when you use the `kind:` keyword, you get both the file type as well as shortcuts that open the file type. To hide the shortcut files, use `NOT shortcut`. For example, here's a search criterion that shows all communications files excluding any shortcuts to those files:

```
kind:(communication NOT shortcut)
```

A search for `kind:video` shows all video files. This search shows all video files except the ones that have a `.mov` filename extension:

```
kind:video NOT extension:mov
```

It's not always necessary to specify the kind or type of file. For example, consider this query:

```
homecity:Cucamonga
```

That one finds all contacts whose Home City is "Cucamonga." Because Contacts are the only type of file that have a Home City property, you'd probably only get contacts in the search results even without specifying `kind:contact`.

You can use `tag:` as a search property, too. For example, the query `tag:(alec OR ashley)` finds files that have either "Alec" or "Ashley" in the Tags property. The query `tag:(alec AND ashley)` finds files that have both the names "Alec" and "Ashley" in the Tags property.

If you use the Comments and Categories properties in files, use `comment:` and `category:` to search just those properties. Similarly, you can use `title:` to search the Title property and `subject:` to search the Subject property.

Date and number searches

When searching for files based on a date, you can use the following property names for specific dates:

- `modified`: Date the file was last modified.
- `accessed`: Date the file was last opened.
- `created`: Date the file was created.
- `sent`: Date that a message was sent.
- `received`: Date that a message was received.
- `taken`: Date that a picture was taken.

To search a range of dates, use the keywords followed by a start date, two dots (`..`), and an end date. For example, to find all pictures taken between June 1, 2012 and September 1, 2012, use the criterion:

```
taken:6/1/2012..9/1/2012
```

You can also use comparison operators with date searches. For example, to see all files modified on or after January 1, 2012, use:

```
modified:>=1/1/2012
```

You can also use the following keywords with dates:

- `today`
- `tomorrow`
- `yesterday`
- `this week`
- `last week`
- `this month`
- `last month`
- `next month`
- `this year`
- `last year`
- `next year`

For example, this search finds all files modified today:

```
modified: today
```

This search shows all files that were created this week:

```
created:this week
```

Here's a query that lists all picture files that were taken this month:

```
taken:this month
```

To see all files modified between some date (say 1/1/2012) and today, use this query:

```
modified:>=1/1/2012 AND modified:<=today
```

If you're interested in a certain month and year, use the month name and year like this:

```
modified:july 2012
```

For a day of the week, use the weekday name like this:

```
modified:monday
```

The comparison operators work with numbers, too. When searching sizes, you can use KB, MB, and GB abbreviations. For example, here's a search criterion that finds all files that are 1MB or greater in size:

```
size:>=1MB
```

Here is one that finds files larger than 2GB in size:

```
size:>2GB
```

Here's one that finds files between 500KB and 1,000KB in size:

```
size:>=500KB AND size:<=1000KB
```

If you save music in various bit rates, here's a query that will find all files with bit rates greater than 300 Kbps:

```
bitrate:>=300kbps
```

If you wanted only MP3 files with those large bit rates, use:

```
bitrate:>=300kbps AND type:mp3
```

Here's a query that finds all pictures whose height is 800 pixels or less:

```
kind:picture height:<=800
```

Searching for phrases

When searching for two or more words, you'll likely end up with documents that contain the words you specified, but not necessarily in the order you typed them. To prevent that problem, you can enclose the phrase is quotation marks. For example, typing the following into a Search box displays all files that contain the words "dear" and "wanda" regardless of their relative positions to one another:

```
dear wanda
```

But typing the following into a Search box displays files where the words "dear" and "wanda" appear right next to each other in the document:

```
"dear wanda"
```

Message searching

For Windows Live Mail messages (both e-mail and newsgroup), key properties include `to:`, `from:`, `about:`, `subject:`, `sent:`, and `received:`. Both `to:` and `from:` can contain any word that appears in the To: and From: columns in the message. The `about:` keyword looks at the contents of the messages, not just the subject line. For example, the following is a query that you could enter in the Search box on the Start menu, which finds all messages from someone named Kay that contain the word "lunch":

```
from:kay about:lunch
```

Here's a query that shows all messages addressed to Alan that arrived today:

```
to:alan received:today
```

Here's a search that shows all messages addressed to Susan, sent by Alan, that have "contract" in the Subject line:

```
to:susan from:alan subject:contract
```

Here's a query for e-mail messages sent this week from Alan to Wanda that contain the words "chow mein":

```
to:wanda about:"chow mein" from:alan sent:this week
```

Natural language queries

Earlier in this chapter, you saw the option Use Natural Language Search in the Folder And Search Options dialog box. If you choose that, you can omit the colons after property names and use uppercase or lowercase letters in search queries. This really does make it easier to type most queries. For example, with natural language, the following query finds all messages from Susan that contain the word "dinner":

```
from susan about dinner
```

This search finds all video files excluding ones with a `.avi` filename extension:

```
kind video not avi
```

Here's the natural language version of the query about "chow mein" e-mail messages:

```
to wanda about chow mein from alan sent this week
```

Here's a query that finds all files whose size is greater than 5 megabytes:

```
size > 5MB
```

Here's a natural language query that finds all songs by Led Zeppelin:

```
music by zeppelin
```

This natural language query finds all pictures that have the word "flower" in the filename:

```
flower pictures
```

Here's a natural language query that finds all files that contain the word "peas," the word "carrots," or both words:

```
peas or carrots
```

Here's a natural language search that finds files that contain the words "peas" and "carrots" (although not necessarily together):

```
peas and carrots
```

Here's one that finds files that contain all three words, "peas and carrots," together:

```
"peas and carrots"
```

Looking for a file you just downloaded or saved today? Try this natural language search in the Search box on the Start menu:

```
created today
```

Here's a natural language search that lists all files modified yesterday:

```
modified yesterday
```

Here are some other natural language searches you can probably figure out without my telling you what they mean:

- `e-mail received today`
- `e-mail from alec received yesterday`

- `contact message`
- `pictures alec`
- `genre rock`
- `artists Santana`
- `rating 5 stars`

Using natural language syntax doesn't mean you can ignore all of the other things described in this chapter. The folder from which you start the search still matters. And all of the other options in the Folder and Search Options and Indexing Options dialog boxes still apply. But in most cases you can type a useful search query with minimal fuss. If you can't get a search to work, try turning off natural language searches and use the stricter syntax with colons after property names.

Wrap-Up

Windows 8's searching and indexing features pick up where Windows 7 left off. Windows 7 was a vast improvement over earlier versions of Windows and the add-on Search Companion used in Windows XP. Windows 8 searching isn't really about finding lost files, although you can certainly use it for that. But if you use it only for that, you're missing out on the big picture and some key features of Windows 8.

Windows 8 searches use an index of filenames, properties, and file contents to make searches quick and nimble. It also looks only at files in the search index because that's a lot faster than slogging through the entire file system to look at every file in every folder. But it only works right if your index includes all the locations where you keep your frequently used document files.

One thing is for sure. If you've been managing thousands of files in hundred of folders, and are sick of opening programs and folders to get to things, you're sure to love the new search index. Maybe not at first, because you really have to understand what it is and how it works. And you may have to spend some time tweaking settings in a couple of dialog boxes. But once you're past that small bump in the road, you'll spend a lot less time *getting to* things, and a lot more time *doing* things!

This chapter introduced the following points:

- The search index includes information about files stored in the file's properties sheets.
- When you select a file in a folder, the Details pane shows the properties currently assigned to the file.
- You can also view a file's properties by right-clicking its icon and choosing Properties. Most editable properties are on the Details tab.

- File properties are also visible in any folder's Details view. That includes virtual folders (saved searches).
- The search index generally covers all files in your user account, people in your Contacts folder, and Windows Live Mail messages.
- The Folder And Search Options dialog box provides some options for personalizing searches.
- The Indexing Options dialog box provides a means of customizing the index to better suit how you organize your files.

CHAPTER
31

Protecting Your Files

IN THIS CHAPTER

- **Simple file backups**
- **Using File History to back up files**
- **Recovering lost files**
- **Using System Protection and restore points**
- **Protecting confidential data with BitLocker drive encryption**

Some things on your hard drive are valuable. Pictures and videos from digital cameras are irreplaceable. Documents you spent hours creating required an investment of your time. You wouldn't want to lose those things because of some technical problem or mistake you made, so it's a good idea to keep backups. That way, if you do lose the originals on your hard drive, you can just restore them from your backup copy.

In addition to the files you create and use yourself, many *system files* reside on your hard drive. These are files that Windows 8 needs to function properly. If those files get messed up, your computer may not work correctly. So you need some means of backing up those system files as well.

This chapter explains how to back up both your personal files and your system files. Of course, the backups won't do you any good if you can't use them when you need them. So, of course, we discuss how to use those backups should the need ever arise to get your system back in shape. We also discuss System Protection, which creates restore points to keep copies of some files around temporarily, to help you fix minor mishaps on the spot, without having to fumble around with external disks.

Simple File Backups

A simple way to back up items from your user account is to copy files to an external disk. You can use any of the methods described in Chapter 28, "Managing Files and Folders," for copying files to accomplish this sort of backup. You just need to make sure that the disk to which you're copying has enough space to store what you're copying.

NOTE

This chapter focuses on using hard drives, flash drives, and similar local disks to make backups. For ways to back up to the "cloud," read Chapter 22, "Working in the Cloud," which covers Microsoft SkyDrive. That chapter shows you how to store files online to give you the ability to back up files to an offsite location, and use those files from anyplace you have Internet access.

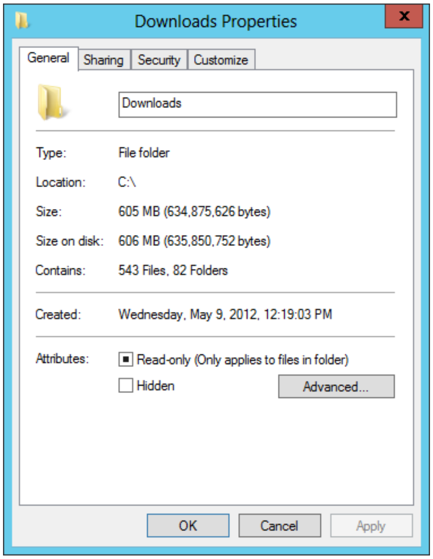
To see how much stuff is in a folder in your user account, open File Explorer and then point to the folder you're considering backing up, or right-click that folder and choose Properties. When you point, the size of the folder shows in a tooltip. When you right-click and choose Properties, the size of the folder shows up next to Size On Disk in the Properties dialog box (see Figure 31.1).

NOTE

Folder sizes show in tooltips only if you selected Show Pop-Up Description For Folder And Desktop Items in the Folder Options dialog box. For more information on that and other terms and concepts used in this chapter, see Chapter 28.

FIGURE 31.1

A folder's size shown on the Properties dialog box



Downloads

Type: File folder
Location: C:\
Size: 605 MB (634,875,626 bytes)
Size on disk: 606 MB (635,850,752 bytes)
Contains: 543 Files, 82 Folders

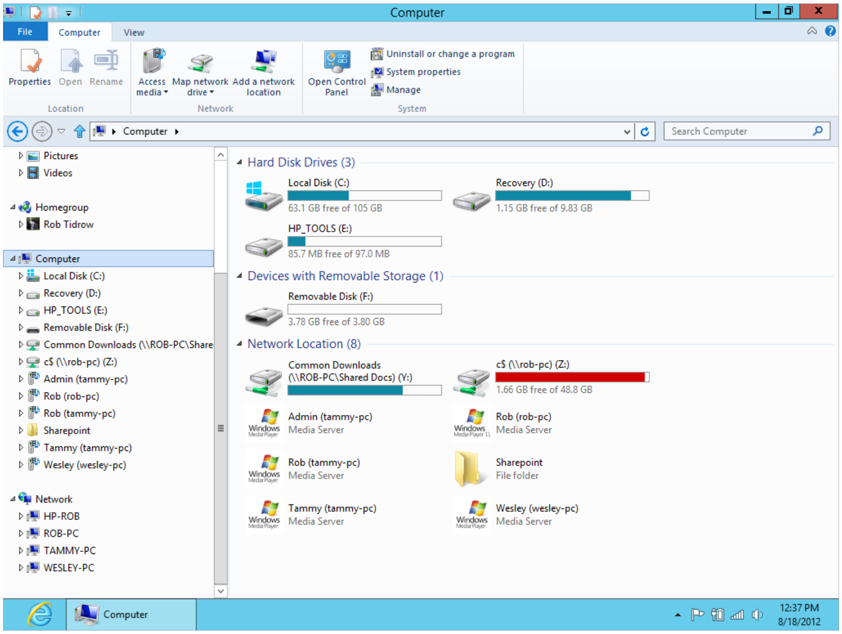
Created: Wednesday, May 9, 2012, 12:19:03 PM

Attributes: ■ Read-only (Only applies to files in folder)
☐ Hidden

To see how much space is available on a removable disk, such as a flash drive, connect it to a USB port and then open your Computer folder. With some kinds of drives, you'll see the amount of available space right on the icon. For example, drive C: in Figure 31.2 has 63.1GB free and the Removable Disk drive F: has 3.78GB free.

FIGURE 31.2

A disk's available space in the Computer folder


Computer
File
Computer
View
Properties
Open
Rename
Location
Access media
Map network drive
Add a network location
Network
Open Control Panel
Uninstall or change a program
System properties
Manage
System
Computer
Search Computer
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Removable Disk (F:)
Common Downloads (\\ROB-PC\Share
c$ (\\rob-pc) (Z:)
Admin (tammy-pc)
Rob (rob-pc)
Rob (tammy-pc)
Sharepoint
Tammy (tammy-pc)
Wesley (wesley-pc)
Network
HP-ROB
ROB-PC
TAMMY-PC
WESLEY-PC
Hard Disk Drives (3)
Local Disk (C:)
63.1 GB free of 105 GB
Recovery (D:)
1.15 GB free of 9.83 GB
HP_TOOLS (E:)
85.7 MB free of 97.0 MB
Devices with Removable Storage (1)
Removable Disk (F:)
3.78 GB free of 3.80 GB
Network Location (8)
Common Downloads (\\ROB-PC\Shared Docs) (Y:)
c$ (\\rob-pc) (Z:)
1.66 GB free of 48.8 GB
Admin (tammy-pc)
Media Server
Rob (rob-pc)
Media Server
Rob (tammy-pc)
Media Server
Sharepoint
File folder
Tammy (tammy-pc)
Media Server
Wesley (wesley-pc)
Media Server
Computer
12:37 PM
8/18/2012

If there is no meter, choose the View tab and then click Tiles from the Layout area.

TIP

1KB is 1,024 bytes, 1MB a little over a million (1,024^2), and 1GB about a billion (1,024^3).

If there's enough space on the disk for the item you want to copy, just go ahead and copy it using any method described in Chapter 28. Should you ever lose or damage a file on your hard drive, you can get it back from the copy that's on the external disk.

NOTE

It's difficult for me to tell you how to back up your e-mail messages because dozens, if not hundreds, of different e-mail services, and multiple e-mail clients exist. They don't all work the same. In fact, e-mail really has nothing to do with Windows 8 at all. It's a service provided by your ISP or mail service provider. Your only real resource for information on that is the tech support provided by your ISP or mail service (or someone who happens to use and know that same service).

That's the quick-and-easy way to make backups of important files. More elaborate methods exist. The next two sections discuss ways of backing up all your files, and even your entire hard drive.

Using File History

Windows 8's File History feature is an alternative to the simple method for backing up files described earlier and is an upgrade to the Windows Backup feature released with Windows 7. File History can back up individual folders, all files for all user accounts, or even your entire hard drive. It works with an external hard drive, USB drive, or a shared network drive. File History makes recovering files very easy as it allows you to access backed up files from File Explorer.

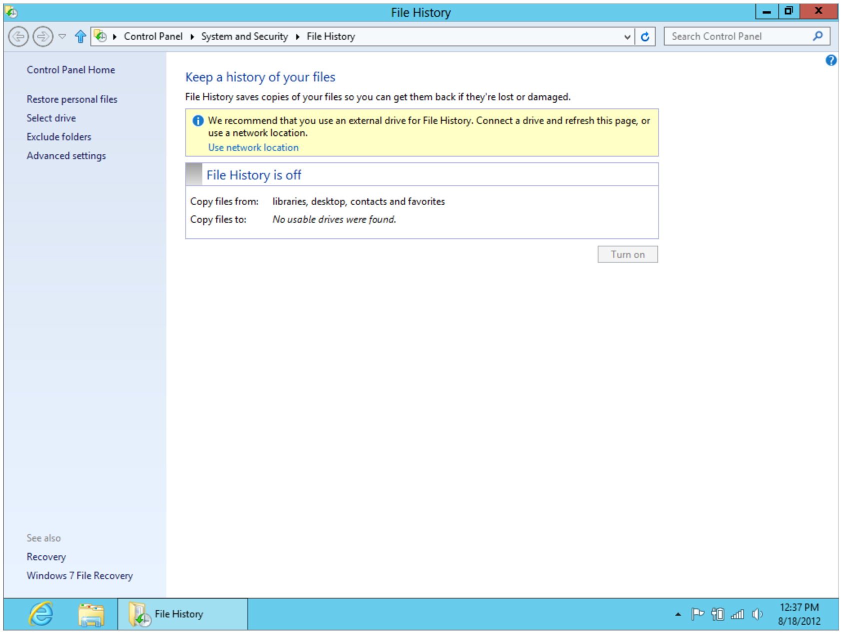
Starting File History

File History is a tool for backing up files in all user accounts so you need administrative privileges to run it. If you're logged in to a standard account, log off. Then log back in to an administrative account.

To launch File History, display the Charms Bar, click Search, and type **File History**. Click Settings and then click File History from the Settings screen, as shown in Figure 31.3.

FIGURE 31.3

File History main page


File History
Control Panel ▸ System and Security ▸ File History
Search Control Panel
Control Panel Home
Restore personal files
Select drive
Exclude folders
Advanced settings
See also
Recovery
Windows 7 File Recovery
Turn on
File History
12:37 PM
8/18/2012

Keep a history of your files

File History saves copies of your files so you can get them back if they're lost or damaged.

We recommend that you use an external drive for File History. Connect a drive and refresh this page, or use a network location.

Use network location

File History is off

Copy files from: libraries, desktop, contacts and favorites

Copy files to: *No usable drives were found.*

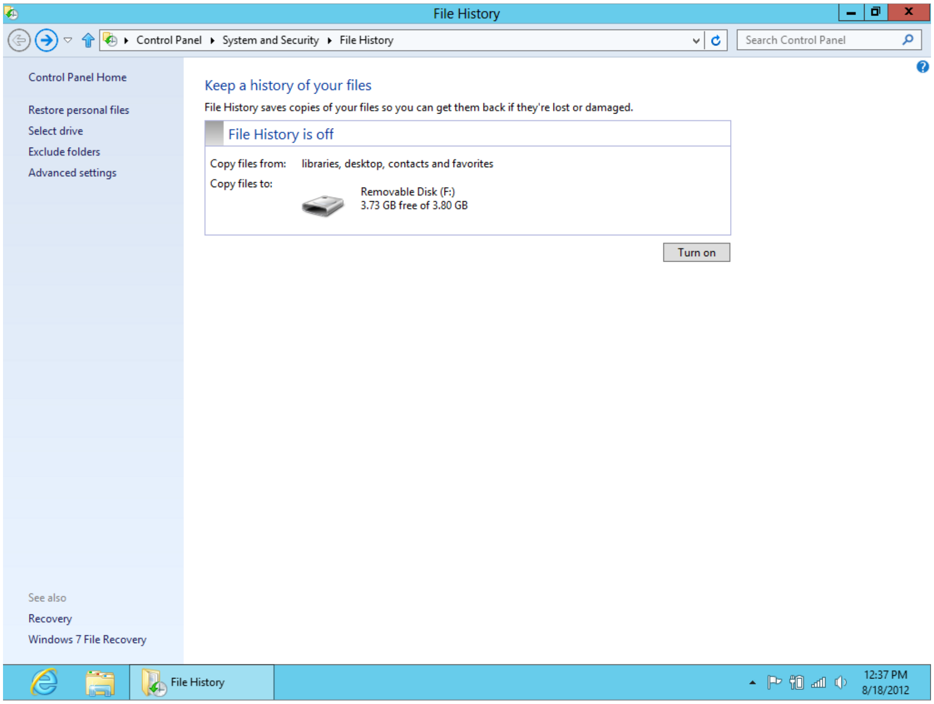
By default, File History is turned off under Windows 8. A message on the main File History page indicates such. Also, File History recommends that you use an external drive for your backup storage device, or use a network location for backups. In fact, notice that the Turn On button is grayed out. You cannot even turn on File History until it recognizes a supported drive.

To turn on File History, connect an external drive to your computer Press F5 on your keyboard or click the Refresh button on the Address bar to refresh the page. If you would rather use a network drive than an external drive, click the Use Network Location link and follow the instructions in the section called "Backing Up to a Network Location."

The example here uses an external USB drive to back up files. Figure 31.4 shows what the File History page looks like after plugging in the USB drive and refreshing the page.

FIGURE 31.4

File History page after connecting our USB drive for backups



File History
Control Panel ▸ System and Security ▸ File History
Search Control Panel
Control Panel Home
Restore personal files
Select drive
Exclude folders
Advanced settings
See also
Recovery
Windows 7 File Recovery
Turn on
File History
12:37 PM
8/18/2012

Keep a history of your files

File History saves copies of your files so you can get them back if they're lost or damaged.

File History is off

Copy files from: libraries, desktop, contacts and favorites

Copy files to: Removable Disk (F:)
3.73 GB free of 3.80 GB

Before turning on File History, note that File History will back up files from the following locations by default:

- Libraries
- Desktop
- Contacts
- Favorites

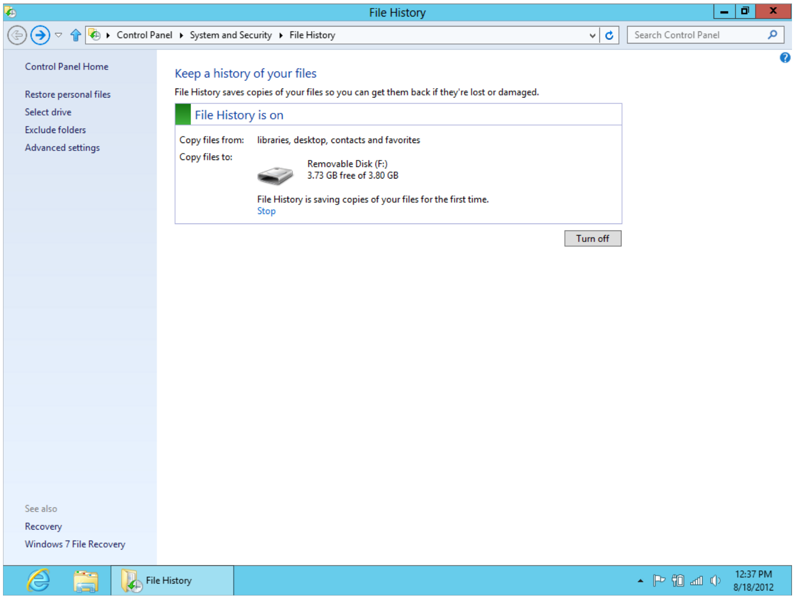
Its main purpose is to make sure that you can recover documents like pictures, music, videos, and such in case you lose the originals on your hard drive.

Click the Turn On button to activate File History. The Recommend A Drive For File History dialog box appears asking if you want to allow others in your network homegroup to use this drive as their backup drive as well. (You learn about Windows 8 homegroups in Chapter 49, "Creating a Home Network.") If you want to allow this, click Yes; otherwise click No.

After you activate File History, the File History page changes to show that it is turned on and that File History is making a copy of your files for the first time (see Figure 31.5). This initial backup may take several minutes or even hours depending on the number of files you have in the folders being backed up. You will know the backup is done when you see a Run Now link appear below the Removable Disk icon, as shown in Figure 31.6.

FIGURE 31.5

File History is now activated.



Keep a history of your files

File History saves copies of your files so you can get them back if they're lost or damaged.

File History is on

Copy files from: libraries, desktop, contacts and favorites

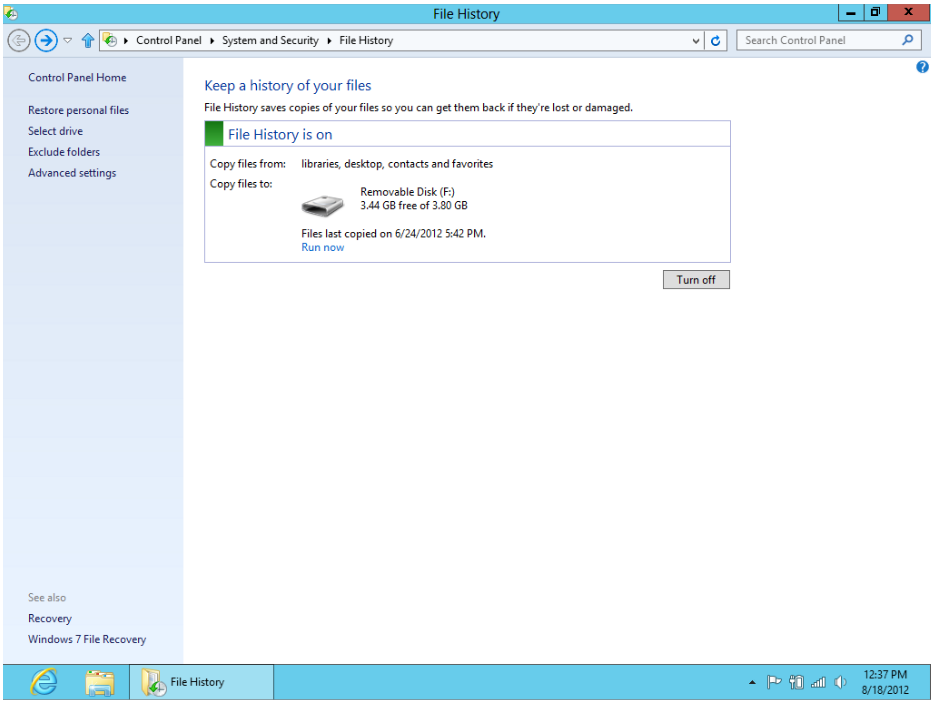
Copy files to: Removable Disk (F:)
3.73 GB free of 3.80 GB

File History is saving copies of your files for the first time.

File History
Control Panel
System and Security
File History
Search Control Panel
Control Panel Home
Restore personal files
Select drive
Exclude folders
Advanced settings
Stop
Turn off
See also
Recovery
Windows 7 File Recovery
File History
12:37 PM
8/18/2012

FIGURE 31.6

The Run Now link indicates your files are backed up.


File History
Control Panel ▸ System and Security ▸ File History
Search Control Panel
Control Panel Home
Restore personal files
Select drive
Exclude folders
Advanced settings
See also
Recovery
Windows 7 File Recovery
Run now
Turn off
File History
12:37 PM
8/18/2012

Keep a history of your files

File History saves copies of your files so you can get them back if they're lost or damaged.

File History is on

Copy files from: libraries, desktop, contacts and favorites

Copy files to: Removable Disk (F:)
3.44 GB free of 3.80 GB

Files last copied on 6/24/2012 5:42 PM.

Tip

The first file backup you perform might take several hours. It will run in the background so you can continue to use your computer during the backup. But the backup will consume some computer resources, slowing things down, so you may want to run the first backup overnight, starting it at a time when you can leave the computer on and running.

As mentioned, the first backup may take a while. But subsequent backups will copy only files that have changed since the last backup, so they'll go more quickly.

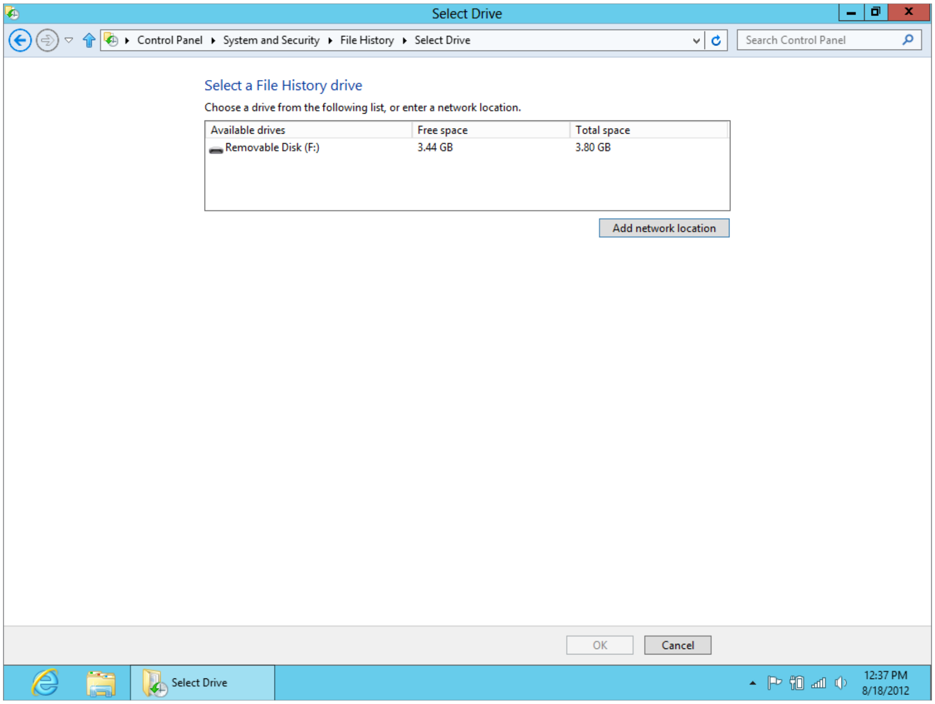
Backing up to a network location

You can use a network location to back up files. This is handy if you have multiple computers in a location and want to use it as a shared backup location. Another benefit to using a network location is access to hard drives that may have large amounts of unused space. Typically, networked computers have larger hard drives than dedicated external drives. In many cases, you can use these larger hard drives to back up files.

To use a network location, click the Use Network Location link when you initially access the File History page. Or click the Select Drive link on the left side of the File History window. This opens the Select Drive window, as shown in Figure 31.7.

FIGURE 31.7

The Select Drive window for choosing different drives to back up files to


Select Drive
Control Panel ▸ System and Security ▸ File History ▸ Select Drive
Search Control Panel
Add network location
OK
Cancel
Select Drive
12:37 PM
8/18/2012

Select a File History drive

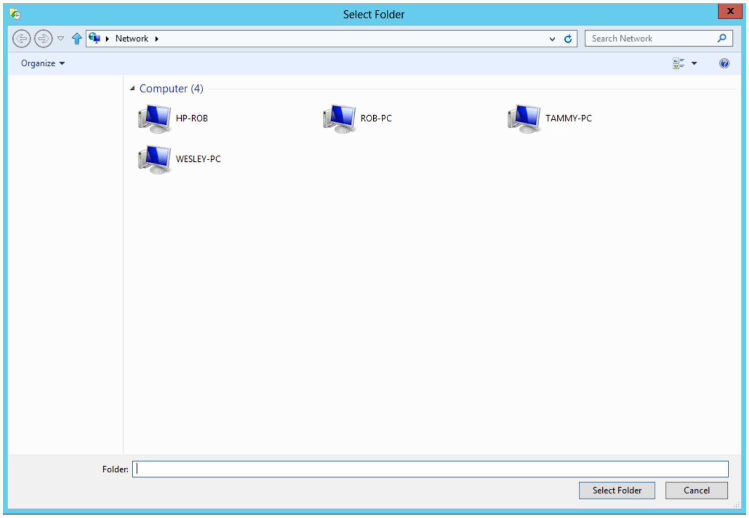
Choose a drive from the following list, or enter a network location.

Available drives	Free space	Total space
Removable Disk (F:)	3.44 GB	3.80 GB

Click the Add Network Location button to display the Select Folder window (as shown in Figure 31.8). Find the computer and folder to back up your files to. You must have network access privileges to access a computer and folder on your network. (Chapter 50, “Sharing Resources on a Network,” discusses sharing resources on a network.) Click Select Folder after you find the location on the network to back up your files.

FIGURE 31.8

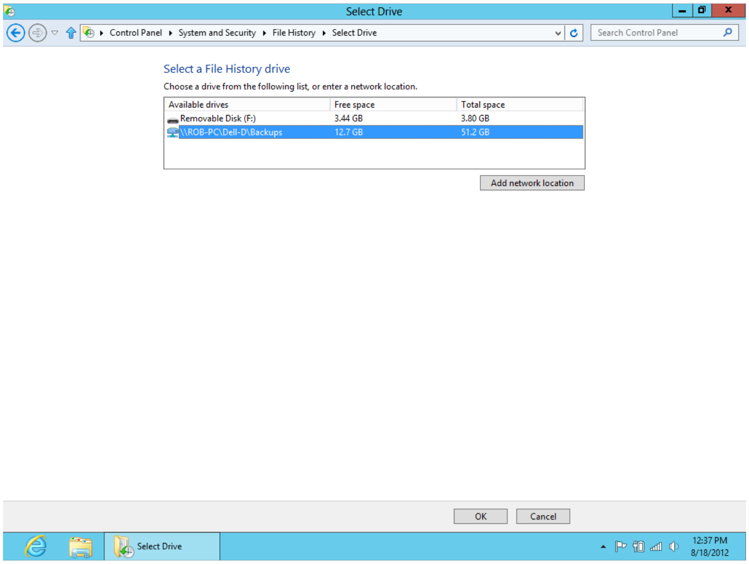
Selecting a network location for backups


Select Folder
Network
Search Network
Organize
Computer (4)
HP-ROB
ROB-PC
TAMMY-PC
WESLEY-PC
Folder:
Select Folder
Cancel

The Select Drive window reappears listing the network drive you just selected (see Figure 31.9). If it's not selected, select it and then click OK to save your selection.

FIGURE 31.9

The Select Drive window showing the network drive we just selected


Select Drive
Control Panel
System and Security
File History
Select Drive
Search Control Panel
Add network location
OK
Cancel
Select Drive
12:37 PM
8/18/2012

Select a File History drive

Choose a drive from the following list, or enter a network location.

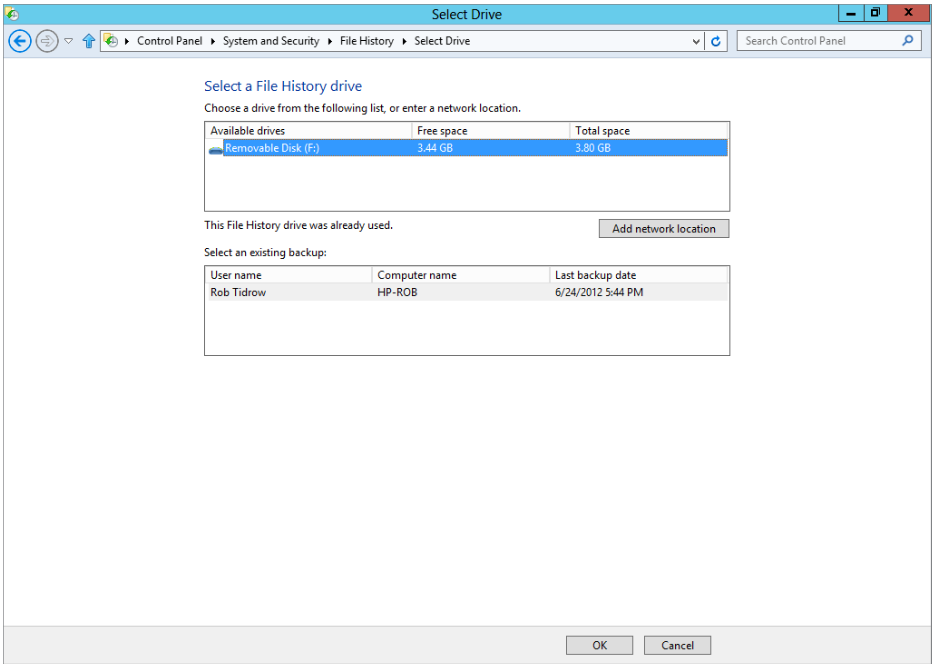
Available drives	Free space	Total space
Removable Disk (F:)	3.44 GB	3.80 GB
\\ROB-PC\Dell-D\Backups	12.7 GB	51.2 GB

For systems on which you have already backed up files to a drive (such as to a USB drive), File History prompts you with a message asking if you want to move your currently backed up files to the network location. Click Yes to ensure all your backed up files are available on the new network location. This move may take several minutes or even hours depending on the number of files on your backup drive.

If you use the Select Drive feature again and select a drive that you've previously used for backups (in the example if you reselect the USB drive), you will be presented with a listing that shows at least one existing backup exists (see Figure 31.10). To ensure all your backed up files are on the most recent drive selection, select an existing backup, choose OK, and then click Yes when prompted to reselect a drive you've previously used.

FIGURE 31.10

Reselecting a previously used drive shows existing backups on that drive.


Select Drive
Control Panel ▸ System and Security ▸ File History ▸ Select Drive
Search Control Panel
Add network location
OK
Cancel

Select a File History drive

Choose a drive from the following list, or enter a network location.

Available drives	Free space	Total space
Removable Disk (F:)	3.44 GB	3.80 GB

This File History drive was already used.

Select an existing backup:

User name	Computer name	Last backup date
Rob Tidrow	HP-ROB	6/24/2012 5:44 PM

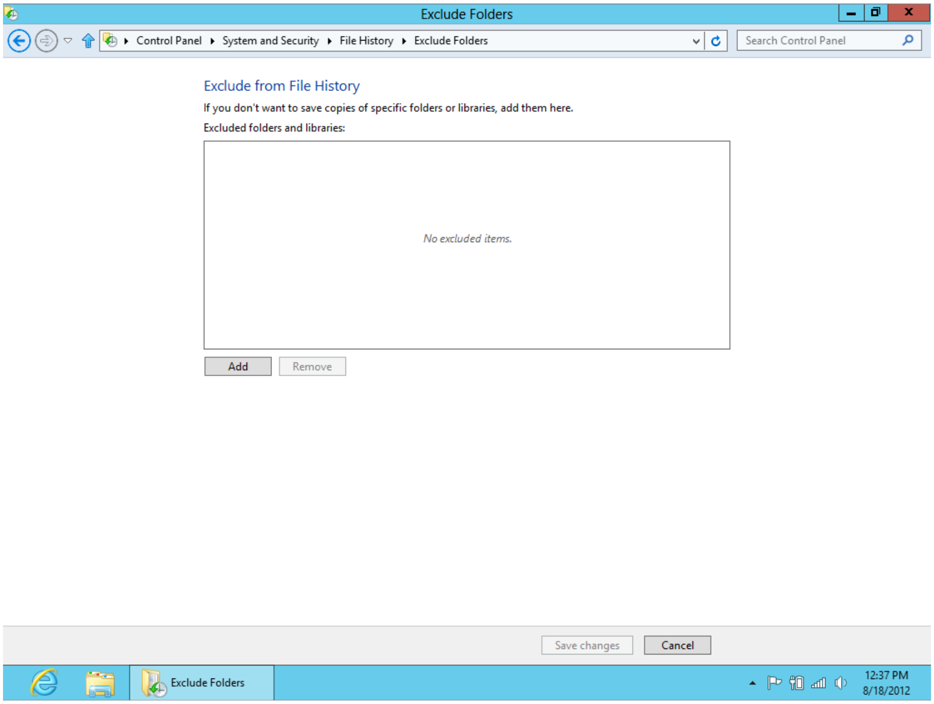
Excluding folders during backups

There may be some folders on your computer that you do not need to back up. For example, you may find that all your music is backed up using a different backup utility or music program. In this case, you do not need to use File History resources (backup time and drive space, for example) to back up your music.

To specify folders that you do not want to back up, click the Exclude Folders link on the left side of the File History window. The Exclude Folders window appears, as shown in Figure 31.11. By default, folders are not excluded so your Excluded Folders And Libraries list will simply say No Excluded Items.

FIGURE 31.11

The Excluded Folders window


Exclude Folders
Control Panel
System and Security
File History
Exclude Folders
Search Control Panel
Add
Remove
Save changes
Cancel
Exclude Folders
12:37 PM
8/18/2012

Exclude from File History

If you don't want to save copies of specific folders or libraries, add them here.

Excluded folders and libraries:

No excluded items.

Click the Add button to display the Select Folder window (see Figure 31.12). Select a folder to exclude and then click Select Folder. File History adds that selected folder to the list of excluded folders. Continue this process until all the folders you want to exclude from backups are selected. In Figure 31.13, for example, we've added the Music and Videos folders to exclude in our backups. Click Save Changes to save your changes.

FIGURE 31.12

The Select Folder window

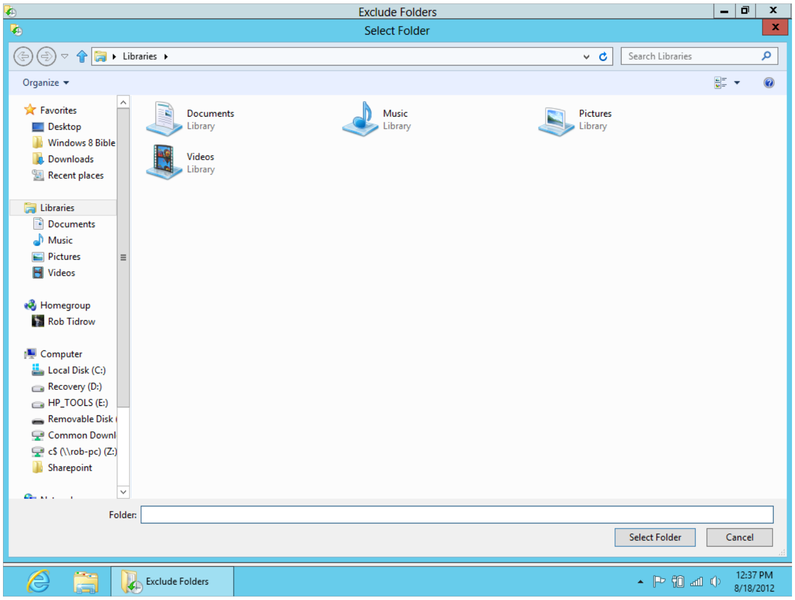
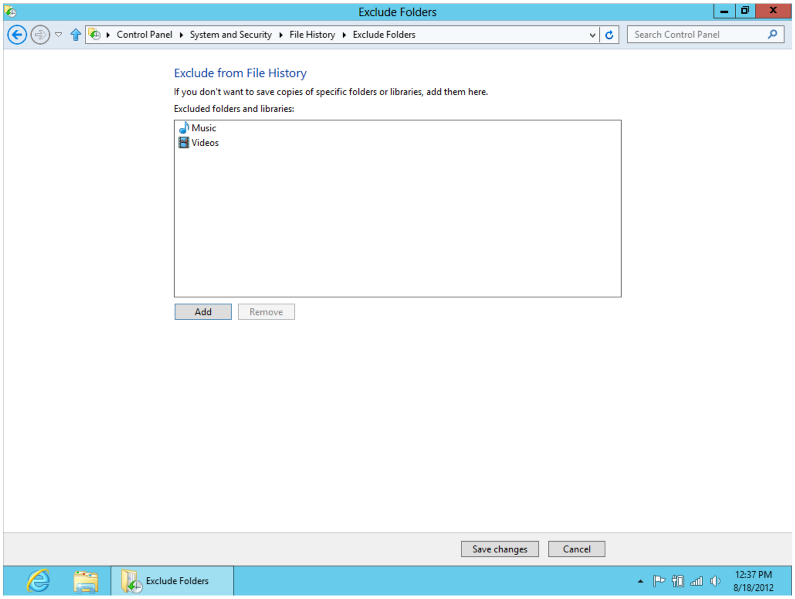

Exclude Folders
Select Folder
Libraries
Search Libraries
Organize
Favorites
Desktop
Windows 8 Bible
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Removable Disk
Common Downl
c$ (\\rob-pc) (Z:)
Sharepoint
Documents
Library
Music
Library
Pictures
Library
Videos
Library
Folder:
Select Folder
Cancel
Exclude Folders
12:37 PM
8/18/2012

FIGURE 31.13

The Excluded Folders window showing two folders to exclude during backups


Exclude Folders
Control Panel
System and Security
File History
Exclude Folders
Search Control Panel

Exclude from File History

If you don't want to save copies of specific folders or libraries, add them here.

Excluded folders and libraries:

Music

Videos

Add
Remove
Save changes
Cancel
Exclude Folders
12:37 PM
8/18/2012

TIP

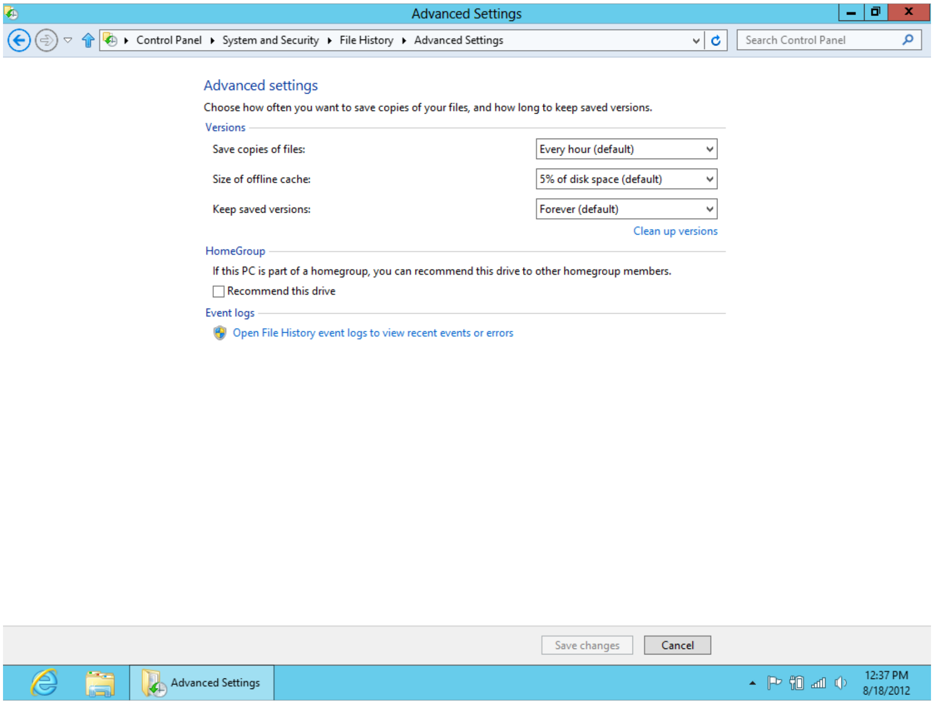
If you want to remove folders or libraries from the Exclude Folders list, select the item and then click Remove. This enables File History to back up files in that folder once again.

Setting the File History advanced option

To change File History advanced settings, click the Advanced Settings link on the File History window. Figure 31.14 shows what the Advanced Settings window looks like. The following paragraphs describe the settings you can modify on this window.

FIGURE 31.14

The Advanced Settings window


Advanced Settings
Control Panel ▸ System and Security ▸ File History ▸ Advanced Settings
Search Control Panel
Save changes
Cancel
Advanced Settings
12:37 PM
8/18/2012

Advanced settings

Choose how often you want to save copies of your files, and how long to keep saved versions.

Versions

Save copies of files: Every hour (default)

Size of offline cache: 5% of disk space (default)

Keep saved versions: Forever (default)

Clean up versions

HomeGroup

If this PC is part of a homegroup, you can recommend this drive to other homegroup members.

☐ Recommend this drive

Event logs

Open File History event logs to view recent events or errors

By default, File History looks to see if you've made changes to already backed up files every hour. If changes have been made, File History saves the most current file to your backup location. If hourly is not an appropriate length of time — too short of a time or too long of a time — change it by choosing a new time from the Save Copies Of Files drop-down list. You have the following options:

- Every 10 Minutes
- Every 15 Minutes
- Every 20 Minutes
- Every 30 Minutes
- Every Hour (Default)
- Every 3 Hours
- Every 6 Hours
- Every 12 Hours
- Daily

The Size Of Offline Cache setting is one that pertains to the amount of offline file cache to use when backing up. By default, you can use 5% of disk space for offline files. Other settings include 2%, 10%, and 20%.

One setting you might want to change is the Keep Saved Versions option. This instructs File History on how long to keep backup copies of your files. File History keeps multiple copies of your files so that you can restore a file to a previous date and time. This feature is great when you accidently delete a file and want to return to a previous version of that file. The downside comes in the amount of space needed to store all these multiple copies.

By default, File History saves all copies forever. You may want to change this to a shorter period of time, such as 1 month or 3 months if you know that you will not need to return to all those multiple versions of the same file. File History keeps the last copies within the time frame you choose, so you do have the option of returning to more recent copies. But you may not ever return to a version that is two years old, for example.

Your options for saved versions include:

- Until Space Is Needed
- 1 Month
- 3 Months
- 6 Months
- 9 Months
- 1 Year
- 2 Years
- Forever (Default)

TIP

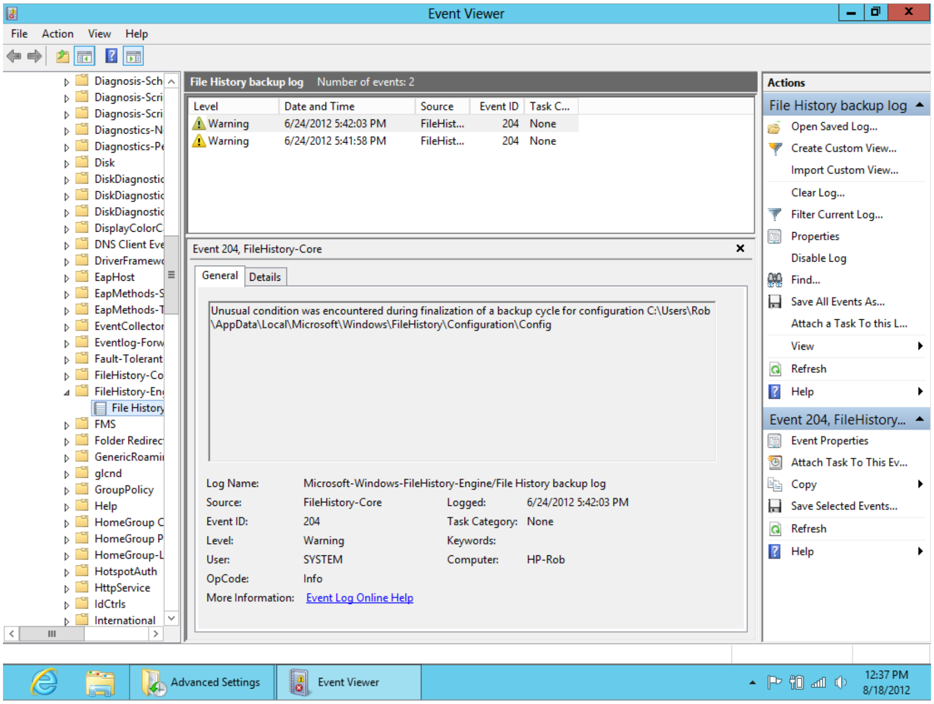
The Clean Up Versions link is used when you want to get back some space on your backup drive. Click that link and File History removes old versions of the same file so that only the most recent copy is on the backup drive.

You can choose the Recommend This Drive option. This option is used only if your computer belongs to a homegroup and you want others on the network to be able use your drive to back up their files.

Finally, you view File History event logs by clicking the Open File History Event Logs To View Recent Events Or Errors option. The event log, which is shown in Figure 31.15, provides helpful information in case you encounter problems with File History. (Chapter 15 includes information on using Event Viewer to read about warnings, errors, and other Windows 8 event information.)

FIGURE 31.15

View File History event logs using the Windows 8 Event Viewer.



Event Viewer
File
Action
View
Help
Diagnosis-Sch
Diagnosis-Scri
Diagnosis-Scri
Diagnostics-N
Diagnostics-Pe
Disk
DiskDiagnostic
DiskDiagnostic
DiskDiagnostic
DisplayColorC
DNS Client Eve
DriverFramew
EapHost
EapMethods-S
EapMethods-T
EventCollector
Eventlog-Forw
Fault-Tolerant
FileHistory-Co
FileHistory-En
File History
FMS
Folder Redirec
GenericRoami
glcnd
GroupPolicy
Help
HomeGroup C
HomeGroup P
HomeGroup-L
HotspotAuth
HttpService
IdCtrls
International
File History backup log
Number of events: 2
Event 204, FileHistory-Core
General
Details
Actions
File History backup log
Open Saved Log...
Create Custom View...
Import Custom View...
Clear Log...
Filter Current Log...
Properties
Disable Log
Find...
Save All Events As...
Attach a Task To this L...
View
Refresh
Help
Event 204, FileHistory...
Event Properties
Attach Task To This Ev...
Copy
Save Selected Events...
Refresh
Help
Advanced Settings
Event Viewer
12:37 PM
8/18/2012

Level	Date and Time	Source	Event ID	Task C...
Warning	6/24/2012 5:42:03 PM	FileHist...	204	None
Warning	6/24/2012 5:41:58 PM	FileHist...	204	None

Unusual condition was encountered during finalization of a backup cycle for configuration C:\Users\Rob\AppData\Local\Microsoft\Windows\FileHistory\Configuration\Config

Log Name: Microsoft-Windows-FileHistory-Engine/File History backup log
Source: FileHistory-Core
Logged: 6/24/2012 5:42:03 PM
Event ID: 204
Task Category: None
Level: Warning
Keywords:
User: SYSTEM
Computer: HP-Rob
OpCode: Info
More Information: Event Log Online Help

When you finish modifying the advanced settings for File History, click Save Changes.

Restoring files from a backup

If there ever comes a time when you've lost or destroyed some important files, you can restore them from your File History backup. But understand that this method is only needed if the files or folders are not in the Windows 8 Recycle Bin. Before you bother with the method described here, open the Recycle Bin and look for the missing file or folder. If you find what you're looking for, right-click it and choose Restore. The deleted item is right back where it was, and there's no need to proceed with the procedure described here.

If this method does not help you recover the lost items, you can restore from your backup. First, log in to the user account from which you lost the files. Open the File History application (type **File History** in the Search field, for example) and then click the Restore Personal Files link on the left side of the File History window. You can see the Restore Personal Files link in Figure 31.4, which appears earlier in this chapter.

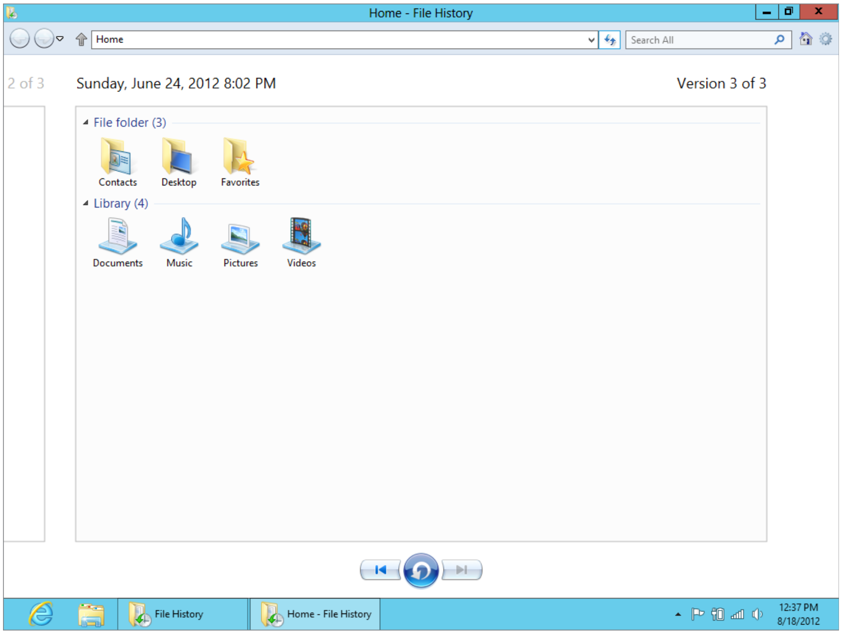
The Home – File History window appears, as shown in Figure 31.16. This window shows all your saved folders.

TIP

You also can access files to restore by opening File Explorer to the folder or library that you want to restore files to. On the Home tab, click the History button. This opens the Home – File History window.

FIGURE 31.16

Restore a file using the Home – File History window.

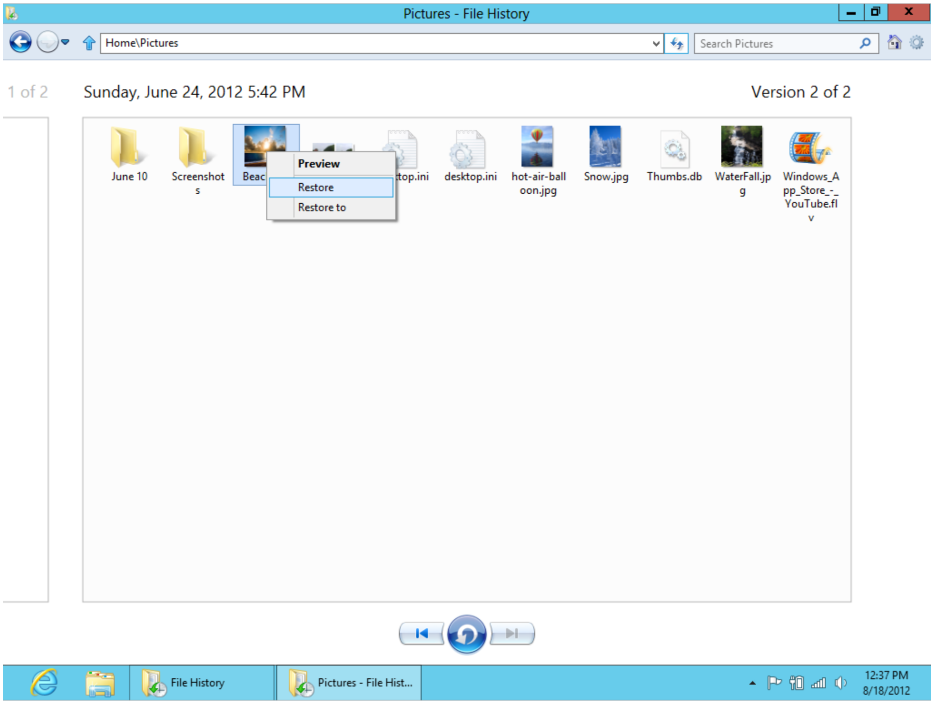

Home - File History
Home
Search All
2 of 3
Sunday, June 24, 2012 8:02 PM
Version 3 of 3
File folder (3)
Contacts
Desktop
Favorites
Library (4)
Documents
Music
Pictures
Videos
File History
Home - File History
12:37 PM
8/18/2012

Find the file you want to restore by opening an appropriate folder. If you know the file is in a previous version, for example, you want to return to a version of a file that is several days old, and if you know it's not the most recent version backed up, use the Previous Version button at the bottom of the window to navigate back in time to see previous versions.

Right-click the file to restore and choose Restore (see Figure 31.17).

FIGURE 31.17

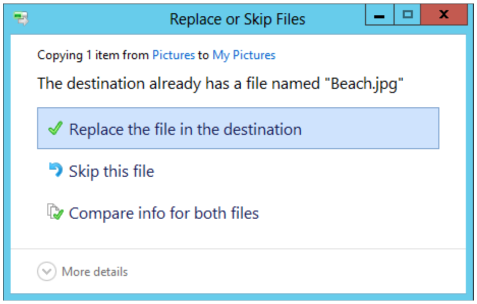
Right-click a file to choose restore options.


Pictures - File History
Home\Pictures
Search Pictures
1 of 2
Sunday, June 24, 2012 5:42 PM
Version 2 of 2
June 10
Screenshots
Beac
Preview
Restore
Restore to
top.ini
desktop.ini
hot-air-balloon.jpg
Snow.jpg
Thumbs.db
WaterFall.jpg
Windows_App_Store_-_YouTube.flv
File History
Pictures - File Hist...
12:37 PM
8/18/2012

The Replace or Skip Files dialog box appears (see Figure 31.18). This dialog box gives you the following options:

FIGURE 31.18

The Replace Or Skip Files dialog box


Replace or Skip Files
Replace the file in the destination
Skip this file
Compare info for both files
More details

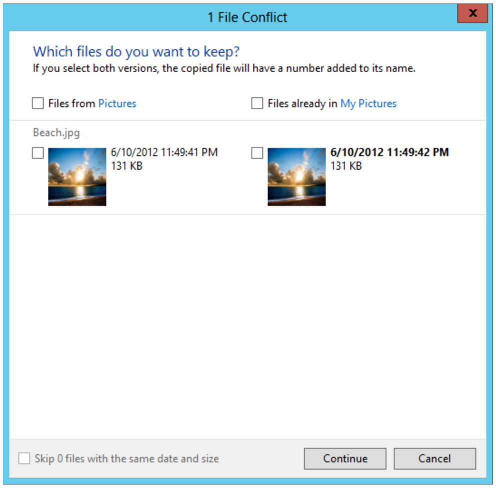
Copying 1 item from Pictures to My Pictures

The destination already has a file named "Beach.jpg"

- **Replace The File In The Destination:** This option replaces the current file on your hard disk with the backed up version you just selected.
- **Skip This File:** This option instructs File History to ignore this file during the restore phase. The option makes sense only if you are choosing multiple files to restore or if you suddenly want to cancel the current restore.
- **Compare Info For Both Files:** Use this option when you want to see file details about the file you selected to restore and the file currently on your hard drive. Figure 31.19 shows an example of the dialog box that appears. From this dialog box, you can select the file you want to keep or keep both copies. (A sequential number will be added to the file name of the restored file. Click Continue to complete the restoration process.

FIGURE 31.19

If you are not sure which version of a file to keep or restore, you can keep both.


1 File Conflict
☐ Files from Pictures
☐ Files already in My Pictures
Beach.jpg
☐ Skip 0 files with the same date and size
Continue
Cancel

Which files do you want to keep?

If you select both versions, the copied file will have a number added to its name.

☐ 6/10/2012 11:49:41 PM
131 KB

☐ **6/10/2012 11:49:42 PM**
131 KB

When restoring a file, you can click Preview to preview the file first. If you want to restore the file but restore it to a different location — which makes a copy of that file somewhere other than its original location — click Restore To and specify a location for it to be restored to. Click Select Folder after you select a folder and to complete the restoration of the file.

Not only can you restore individual or multiple files, you can use the preceding instructions for restoring complete folders as well.

The following sections do not use File History, so you can close its window by clicking the red Close button (X).

Using System Protection

System Protection enables you to create a restore point, which is a way to back up important Windows system files. Unlike File History, System Protection doesn't require or use any external disks. Also, it does not back up any installed programs or all of Windows 8. Rather, System Protection creates System restore points that maintain copies of the most important system files needed for Windows 8 to operate properly, as well as hidden *shadow copies* of some of your own personal files.

The idea behind System Protection isn't to protect you from rare catastrophic hard drive disasters; it's to protect you from smaller and much more common mishaps. For example, you install some program or device that wasn't really designed for Windows 8, on the grounds that "It worked fine in Windows 7 or another version of Windows so it should work fine here," only to discover that it doesn't work as well as you assumed it would (because it wasn't designed for Windows 8). Even after uninstalling the program, you find that some Windows 8 features don't work like they did before you got the notion to give the old program or device a try.

Another common mishap occurs when you make some changes to an important file, but they're not particularly good changes. But you save the changes anyway out of habit, thereby losing the original good copy of the file you started with. Sometimes System Protection can even help you recover a file that you deleted and removed from the Recycle Bin.

Turning System Protection on or off

System Protection is turned on by default for the drive on which Windows 8 is installed. That means it's protecting your Windows 8 operating system and also documents you keep in your user account folders such as Documents, Pictures, Music, and so forth.

If you have documents on other hard drives, you can extend System Protection to protect documents on those drives, too. However, it would be best not to try to use System Protection to protect a hard drive that has another operating system installed on it.

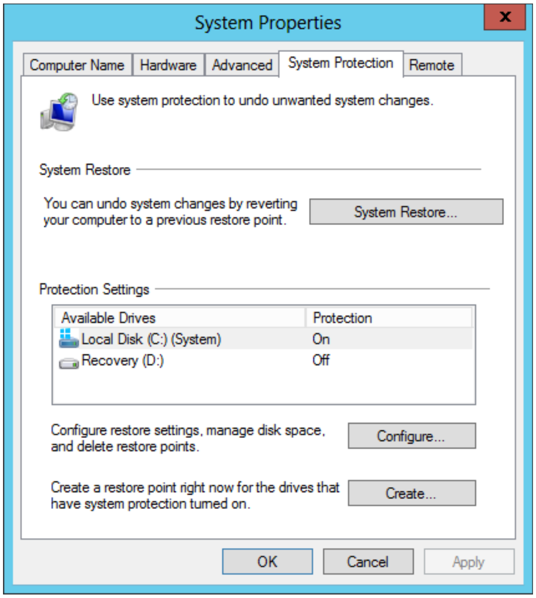
System Protection is an optional feature. You can turn it on and off at will (providing you have administrative privileges, because it affects all user accounts). And you can choose for yourself which *volumes* it monitors. (A volume is any hard drive or hard drive partition that looks like a hard drive in your Computer folder.) To get to the options for controlling System Protection, first open your System folder using any of the following techniques:

- Display the Charms Bar, choose Search, type **System Protection**, and click Settings. Click Create A Restore Point on the Settings page.
- Display the Charms Bar, choose Search, type **Restore**, and click Settings. Click Create A Restore Point on the Settings page.

The System Properties dialog box appears, with the System Protection tab selected (see Figure 31.20).

FIGURE 31.20

System Protection tab in System Properties



Use system protection to undo unwanted system changes.

You can undo system changes by reverting your computer to a previous restore point.

Available Drives	Protection
Local Disk (C:) (System)	On
Recovery (D:)	Off

Configure restore settings, manage disk space, and delete restore points.

Create a restore point right now for the drives that have system protection turned on.

To ensure that system protection for Windows 8 and user account files are turned on, first look in the Protection Settings box to verify that the Protection column shows “On” for your system disk (typically Drive C:). If the Protection column indicates that protection is off, click the Configure button to open the System Protection dialog box. Then, choose one of the first two settings in the Restore Settings group. You can also specify how much disk space to allocate to system protection with the Max Usage slider.

CAUTION
Note that if you turn off System Protection, all existing restore points are deleted.

If your computer contains other volumes, whether you apply System Protection to them depends on what is on the volumes and whether you find it worthwhile to enable system protection on them.

After you've made your selections, click OK. You're done. Nothing happens immediately, but Windows 8 creates *restore points* every 24 hours. Each restore point contains copies of your important system files and *shadow copies* of files on the volumes you specified.

System Protection needs a minimum of 300MB of space on each protected volume for restore points. If necessary, it will use from 3 to 5 percent of the total drive capacity. It won't grow indefinitely or consume a significant amount of disk space. Instead, it deletes old restore points before creating new ones. Old restore points are of dubious value anyway.

Creating a restore point

System Restore is the component of System Protection that protects your important system files — the ones Windows 8 needs to work correctly. System Restore automatically creates a restore point daily. It also creates a restore point when it detects that you're about to do something that changes system files. But you can also create your own restore points. This might be a good idea when you're about to install some older hardware or software that wasn't specifically designed for Windows 8. It's certainly not required, but it's a smart and safe thing to do.

To create a restore point, get to the System Protection tab shown back in Figure 31.20 and click the Create button. When prompted, you can type a brief explanation as to why you manually created the restore point: perhaps "Pre-Acme Widget install" if you're about to install an Acme widget. Then click Create. Windows creates a restore point, after which you can click Close. Click OK to close the System Properties dialog box.

Next, you install your Acme Widget or whatever. Take it for a spin, make sure it works. If it works fine and you don't notice any adverse effects, great. You can forget about the restore point and go on your merry way.

If it turns out that change you made wasn't such a great idea after all, first you have to uninstall it. That's true whether it's hardware or software.

After you've uninstalled the bad device or program, you can make sure no remnants of it lag behind by returning to the restore point you specifically set up for that program or device.

If you install other programs or devices after the bad one, don't skip over other restore points to the one you created for the new item. If you do, you'll also undo the good changes made by the good programs and devices, which will likely make those stop working! You have to be methodical about these things. Set the restore point, install the program or device, and test the program or device. If (and only if) you encounter problems, uninstall the device or program and return to the last restore point you set.

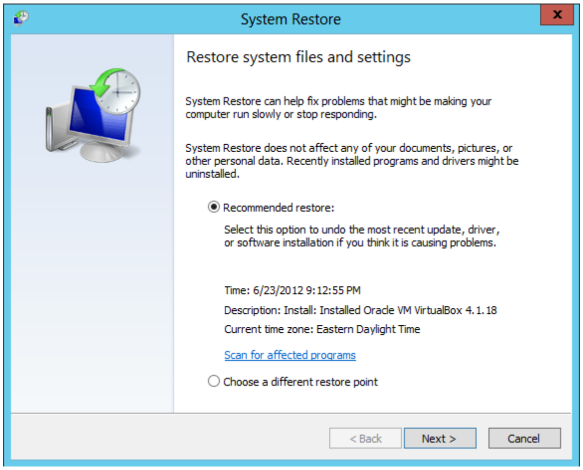
Returning to a previous restore point

Say you installed something that didn't work out, uninstalled it, and now you want to make sure your system files are exactly as they were before. Open the System Properties dialog box and click the System Protection tab. Click System Restore.

The System Restore Wizard starts, as shown in Figure 31.21. Click the Recommended Restore option and click Next. Click Finish to undo the most recent update, driver installation, or software install (for example, our Acme Widget installation). Windows 8 makes those changes and then restarts your computer. Upon restart, you see a confirmation about restoring your system files.

FIGURE 31.21

Using a Restore Point can possibly fix issues with the way Windows runs.



Restore system files and settings

System Restore can help fix problems that might be making your computer run slowly or stop responding.

System Restore does not affect any of your documents, pictures, or other personal data. Recently installed programs and drivers might be uninstalled.

● Recommended restore:

Select this option to undo the most recent update, driver, or software installation if you think it is causing problems.

Time: 6/23/2012 9:12:55 PM

Description: Install: Installed Oracle VM VirtualBox 4.1.18

Current time zone: Eastern Daylight Time

Scan for affected programs

○ Choose a different restore point

NOTE

For technical readers, we should mention that you can run System Restore from a command prompt. This is good to know if you can only start the computer in Safe Mode with the command prompt. Type **rstrui.exe** at the command prompt and press Enter.

Undoing a system restore

If you use System Restore and restore points exactly as described in the preceding sections, things will go smoothly. If you try to use it in other ways, things probably will not go smoothly. In fact, returning your system to an earlier restore point might cause more problems than it solves. When that happens, you can undo that last restore. Here's how:

1. Open System Restore.
2. Click Choose A Different Restore Point and click Next.
3. Choose the restore point labeled Undo and click Next.
4. Click Finish and follow the onscreen instructions.

Your computer restarts, and you see a confirmation message about undoing the restore point.

System Restore and the restore points you've just learned about have absolutely nothing to do with your document files. System Restore does not change, delete, undelete, or affect document files in any way, shape, or form. You should only use System Restore and restore points exactly as described.

Using BitLocker Drive Encryption

File History and System Protection ensure the *availability* of your files, in that they allow you to restore lost or damaged files by restoring from a backup copy. BitLocker drive encryption isn't about availability. It's about *confidentiality*. If your notebook computer is lost or stolen, that's certainly a bad thing. But if it contains confidential personal, client, or patient information, that's even worse. BitLocker drive encryption ensures that lost or stolen data can't be read by prying eyes.

TIP

BitLocker differs from the Encrypting File System (EFS) in that EFS encrypts individual folders and files, whereas BitLocker encrypts the whole disk.

BitLocker drive encryption works by encrypting all the data on a hard drive. With BitLocker drive encryption active, you can still use the computer normally. All the necessary encryption and decryption takes place automatically behind the scenes. But a thief would be unable to access data, passwords, or confidential information on the drive.

TIP

BitLocker drive encryption ensures the confidentiality of data stored in portable computers.

BitLocker hardware requirements

BitLocker drive encryption uses an encryption key to encrypt and decrypt data. That key must be stored in a Trusted Platform Module (TPM) Version 1.2 microchip and compatible BIOS. Only newer computers come with the appropriate hardware preinstalled. You'll also need a USB flash drive to store a copy of the password.

Caution, Caution, and More Caution

BitLocker drive encryption is primarily designed for organizations that have sensitive data stored on notebooks and PCs. Theft of that data could have a negative impact on the organization, its customers, or its shareholders. While transparent to the user, the act of setting up BitLocker would normally be entrusted to IT professionals within the organization.

If you're not an IT professional, you need to be aware of the risks involved, especially if you plan to set up BitLocker on a hard drive that already contains files. First, always back up your data before re-partitioning a drive. Although many programs on the market allow you to repartition a disk without losing data, there's always a risk involved. A backup is your only real insurance. More important, you should understand that BitLocker is not for the technologically faint-of-heart. There is no way to undo any bad guesses or mistakes. If not handled with the utmost care, BitLocker can render your computer useless and your data unrecoverable. If you're not technologically inclined, but have a serious need for drive encryption, consider getting professional support in setting up BitLocker for your system.

NOTE

The first time you open the BitLocker task page, you'll see a message indicating whether you do, or don't, have a TPM Version 1.2 chip installed. If you're certain that you have such a chip, but Windows 8 fails to recognize it, check with your computer manufacturer for instructions on making it available to Windows 8.

In addition to a TPM chip, your hard drive must contain at least two volumes (also called partitions). One volume, called the *system volume*, must be at least 1.5GB in size. That one contains some startup files and cannot be encrypted. The other volume, called the *operating system volume*, will contain Windows 8, your installed programs, and user account folders. Both volumes must be formatted with NTFS.

Encrypting the volume

When all the necessary hardware is in place, setting up BitLocker drive encryption is a relatively easy task:

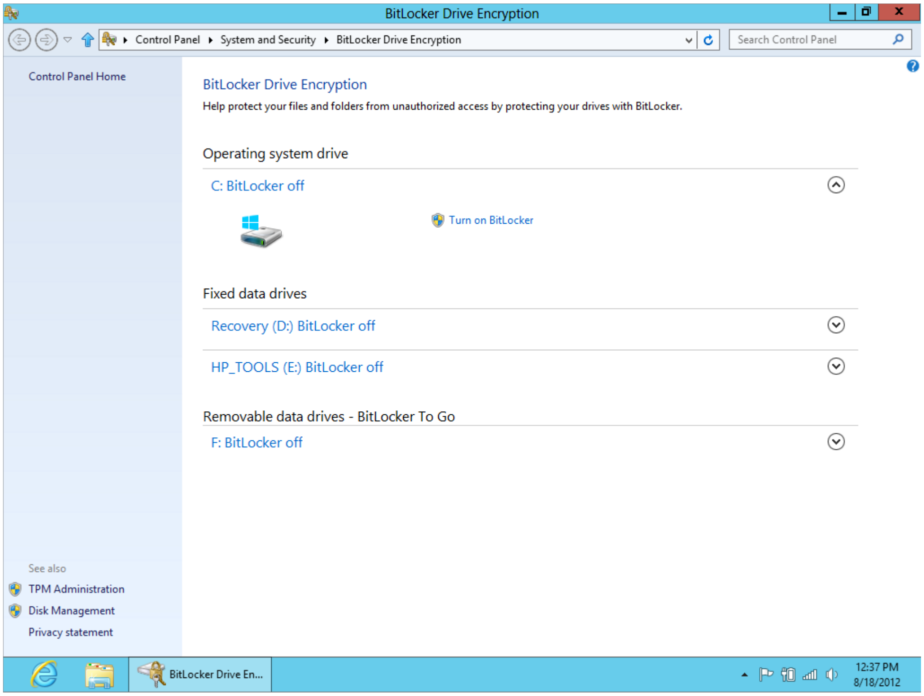
1. Display the Charms Bar, choose Search, and type **BitLocker**. Click Settings and then click BitLocker Drive Encryption on the Settings window.

If your hardware setup doesn't support BitLocker, you'll see messages to that effect. You cannot continue without appropriate hardware and disk partitions.

2. If all systems are go, the BitLocker Drive Encryption window appears (see Figure 31.22).
3. Click Turn On BitLocker. If your TPM isn't initialized, a wizard takes you through the steps to initialize it. Follow the onscreen instructions to complete the initialization.
4. When prompted, choose your preferred password storage method, store the password, and click Next.
5. On the encryption page, select (check) the Run BitLocker system check and click Continue.
6. Insert the password recovery USB flash drive (or whatever medium you used for password recovery) and click Restart Now.
7. Follow the onscreen instructions.

FIGURE 31.22

The BitLocker Drive Encryption window



Help protect your files and folders from unauthorized access by protecting your drives with BitLocker.

BitLocker Drive Encryption
Control Panel ▸ System and Security ▸ BitLocker Drive Encryption
Search Control Panel
Control Panel Home
BitLocker Drive Encryption
Operating system drive
C: BitLocker off
Turn on BitLocker
Fixed data drives
Recovery (D:) BitLocker off
HP_TOOLS (E:) BitLocker off
Removable data drives - BitLocker To Go
F: BitLocker off
See also
TPM Administration
Disk Management
Privacy statement
BitLocker Drive En...
12:37 PM
8/18/2012

The wizard will ensure that all systems are working and it's safe to encrypt the drive. Just follow the instructions to the end to complete the procedure.

Make sure you password-protect all user accounts to prevent unauthorized access to the system. Otherwise a thief can get at the encrypted data just by logging in to a user account that requires no password!

When the computer won't start

Once BitLocker is enabled, you should be able to start the computer and log in to it normally. BitLocker will only prevent normal startup if it detects changes that could indicate tampering. For example, putting the drive in a different computer, or even making BIOS changes that look like tampering, will cause BitLocker to prevent bootup. To get past the block, you'll need to supply the appropriate password.

Turning off BitLocker

Should you ever change your mind about using BitLocker, repeat the steps in the section "Encrypting the volume" and choose the option to turn off BitLocker drive encryption.

More info on BitLocker

The setup wizard for BitLocker drive encryption is designed to simplify the process as much as possible for people using computers with TPM 1.2. Other scenarios are possible, but go beyond the scope of this book. For more information, search Windows Help for **BitLocker**. Or better yet, browse to `www.TechNet.com` and search for **BitLocker**.

Wrap-Up

Any way you slice it, having two or more copies of important files is better than having only one copy. The reason is simple and obvious: If you have two or more copies, you can afford to lose one copy. This chapter has been about different ways to make backup copies of important files. Here's a summary:

- To make simple backups of files on the fly, copy them to external disks as convenient.
- To restore an accidentally deleted file, first try to restore it from the Recycle Bin.
- To back up files in the Libraries, Desktop, Contacts, and Favorites folders, use File History.
- To recover deleted files, use the Restore Personal Files link on the File History window.

- Use System Protection to make automatic daily backups of important system files and documents. These won't protect you from a hard drive disaster because they're on the same disk as the system files and documents. But they provide a relatively easy means of recovering from minor mishaps without messing with external disks.
- To use System Restore properly, create a restore point just before installing new hardware or software. If the new product creates a problem, uninstall it. Then return to your restore point to ensure all traces of the installation are wiped away.
- For data confidentiality on portable computers, Windows 8 offers BitLocker drive encryption.

Part VII

Printing, Faxing, and Scanning

IN THIS PART

Chapter 32
Installing and Managing Printers

Chapter 33
Printing Documents and Screenshots

Chapter 34
Managing Print Jobs

Chapter 35
Faxing and Scanning

Chapter 36
Troubleshooting Printing and Faxing

CHAPTER

32

Installing and Managing Printers

IN THIS CHAPTER

- Using the new Windows 8 Devices tool
- Using your Devices and Printers folder
- Choosing a default printer
- Installing a new printer
- Managing printer drivers
- Setting default printer properties

Installing a printer is usually an easy job. There's one rule that applies to installing any hardware, and it certainly applies to printers: *Read the instructions that came with the printer first*. Trying to save time by ignoring the instructions and winging it is likely to cost you more time in getting the thing to work.

In many cases, you'll have the option to connect the printer to a USB port or a printer port. If your computer is a member of a network, you might want to install a shared printer that's physically connected to some other computer. This chapter looks at different ways of installing printers, including using the new Windows 8 Devices tool, as well as techniques for managing installed printers.

Printer Properties Versus Printing Properties

Two types of properties are covered in this chapter: *printer properties* and *printing preferences*. The distinction isn't obvious from the terminology, so here's a general description to help you understand the difference:

- **Printer properties:** These properties apply to the printer itself, such as the way it is connected to the computer, whether and how it is shared on the network, the way the computer sends information to the printer, when the printer is available, and more.

- **Printing preferences:** These properties apply to how the printer creates a printed document, including such features as paper source, paper size, duplex printing, paper quality settings, print scaling, watermarks, and other document output properties.

In a way, you can think of printer properties as related to how the printer prints *all* documents, and printing preferences as related to how the printer prints *specific* documents. That's not 100 percent accurate, but it should begin to help you understand the distinction between the two.

If you are a typical Windows user, you will be more likely to spend time configuring printing properties than printer properties. If you are a power user or administrator, however, you'll no doubt spend some time configuring printer properties to control how the printer operates.

Before diving into printer and printing preferences, you need to get your printer installed. That's covered in the following section.

NEW FEATURE

Windows 8 has two ways to view and manage your printers. First, the new Windows 8 Devices tool lets you view, add, and remove hardware devices, including printers. The Devices and Printers folder, which was introduced in Windows 7, is still around. It is the place to go to manage hardware devices such as displays, keyboards, input devices, wireless network adapters, and printers.

Add a Printer with the Devices Tool

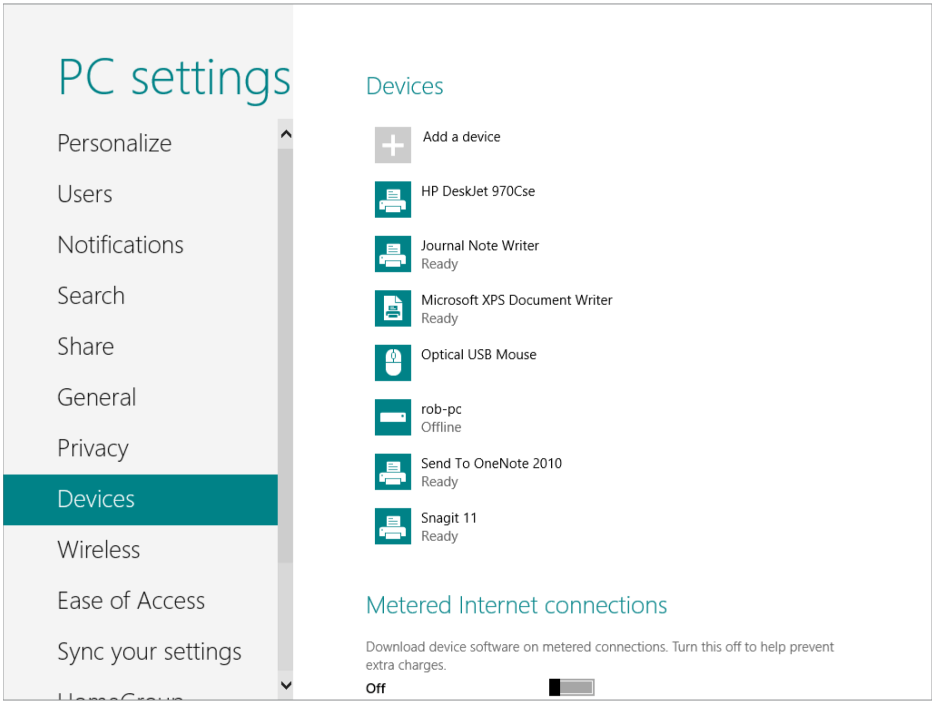
Windows 8 includes a new Devices tool in the PC Settings area. The Devices tool provides a way to add, remove, and view your hardware devices, such as a printer. What we have found is that once Windows 8 recognizes a new printer connected to your computer, regardless of whether you are actively using the Devices tool, Windows 8 automatically installs device drivers for it (as long as those device drivers are part of the Windows 8 installation).

To get to the Devices tool, do the following:

1. Show the Charms Bar.
2. Choose Settings.
3. Click Change PC Settings.
4. Click Devices on the PC Settings list. An example of the Devices tool is shown in Figure 32.1.

FIGURE 32.1

The new Windows 8 Devices tool


PC settings
Personalize
Users
Notifications
Search
Share
General
Privacy
Devices
Wireless
Ease of Access
Sync your settings
HomeGroup
Devices
Add a device
HP DeskJet 970Cse
Journal Note Writer
Ready
Microsoft XPS Document Writer
Ready
Optical USB Mouse
rob-pc
Offline
Send To OneNote 2010
Ready
Snagit 11
Ready
Metered Internet connections

Download device software on metered connections. Turn this off to help prevent extra charges.

Off

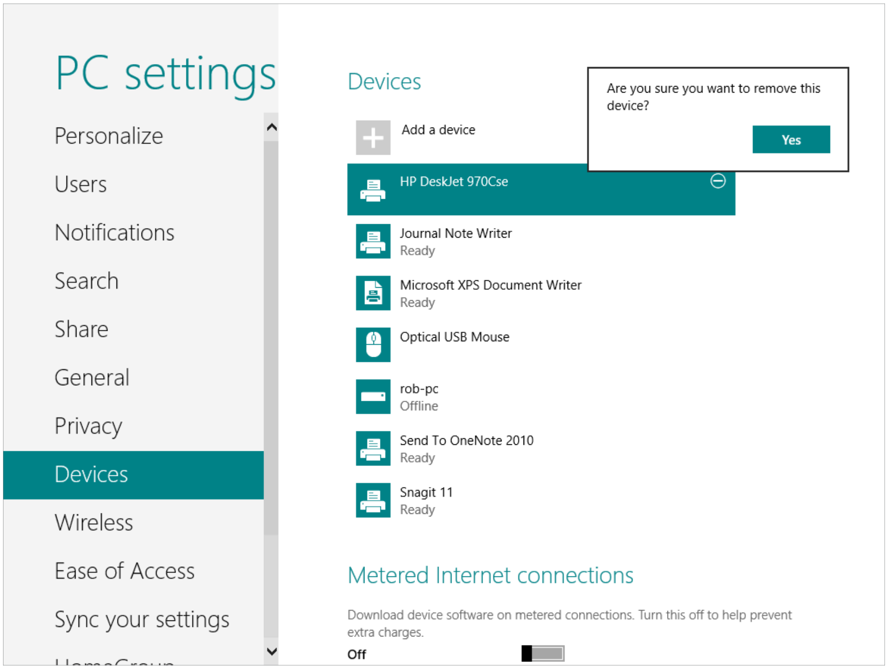
In this example, a printer named HP DeskJet 970Cse has been added to the Devices list. If your printer is not showing up in this list, make sure the printer is connected to an active USB port (or other printer port) and ensure the printer is turned on. If, after doing these checks, the printer does not start installing, click the Add A Device button on the Devices page. Windows 8 will look for the new device (your printer in this case) and upon locating it will install the necessary drivers or prompt you for a location to find the drivers. In some cases, those drivers can be located online from the printer manufacturer's website. In other cases, the drivers are located on a distribution disc that was bundled with your printer.

Learn more about installing printers in the "Installing a New Printer" section later in this chapter.

Once you have a printer installed, you really can do only two other things in the Devices tool. You can view the name of the printer, such as HP DeskJet 970Cse, and you can remove a device from your computer. To remove a device, select it and click the minus sign that appears to the right of the device name. A message (see Figure 32.2) pops up asking if you are sure you want to uninstall the device. Click Yes. (If you are not sure and want to keep the device installed as-is, press Esc on your computer's keyboard.)

FIGURE 32.2

Removing a printer using the new Windows 8 Devices tool



Are you sure you want to remove this device?

HP DeskJet 970Cse

Journal Note Writer
Ready

Microsoft XPS Document Writer
Ready

Optical USB Mouse

rob-pc
Offline

Send To OneNote 2010
Ready

Snagit 11
Ready

Metered Internet connections

Download device software on metered connections. Turn this off to help prevent extra charges.

Off

Opening the Devices and Printers Folder

Another tool to use for setting up and managing printers is the Devices and Printers folder. This folder includes the same features of the new Windows 8 Devices tool (see the preceding section), but also adds management of properties and printer options to the list of tasks available to you.

In the past, aside from actually printing documents, just about everything you did with printers took place in the Devices and Printers folder. As you read already, some tasks can be done using the new Devices tool.

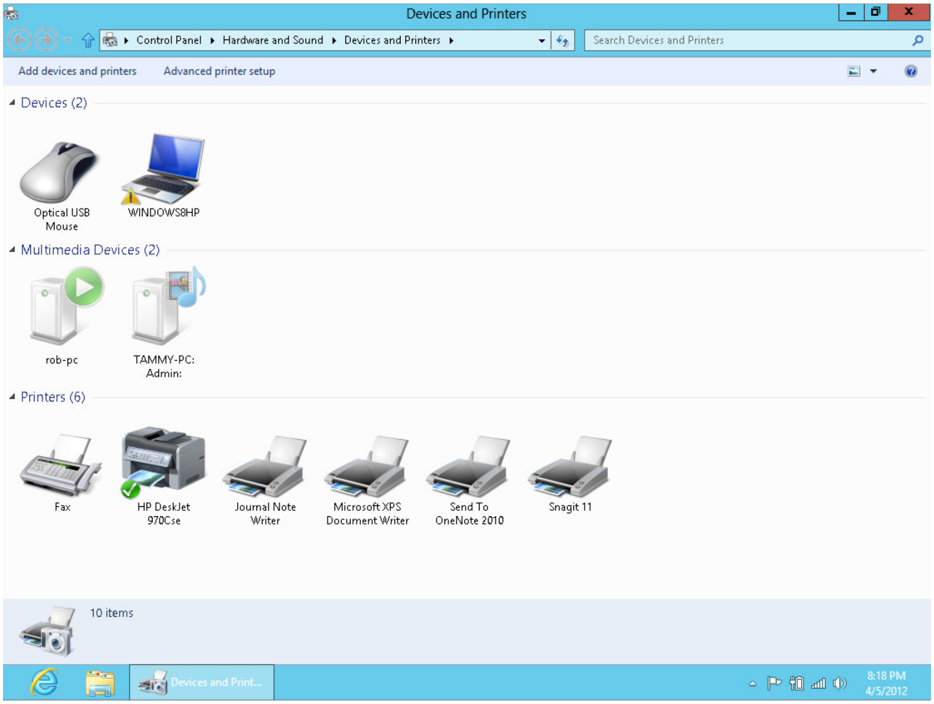
As with everything else in Windows 8, you can get to the Devices and Printers folder in several ways. Use whichever works for you and is most convenient at the moment:

- Show the Charms Bar, choose Search, and type **dev** and click the Settings link. On the Settings Results page, click the Devices And Printers item.
- On the Windows desktop, press Windows+X, choose Control Panel ➪ View Devices And Printers under Hardware And Sound.

When you're in your Devices and Printers folder, you'll see an icon for each printer (or similar device) that you can print to. Figure 32.3 shows an example; your folder will, of course, look different.

FIGURE 32.3

Sample Devices and Printers folder


Devices and Printers
Control Panel ▸ Hardware and Sound ▸ Devices and Printers ▸
Search Devices and Printers
Add devices and printers
Advanced printer setup
Devices (2)
Optical USB Mouse
WINDOWS8HP
Multimedia Devices (2)
rob-pc
TAMMY-PC: Admin:
Printers (6)
Fax
HP DeskJet 970Cse
Journal Note Writer
Microsoft XPS Document Writer
Send To OneNote 2010
Snagit 11
10 items
Devices and Print...
8:18 PM
4/5/2012

Setting the default printer

If your Devices and Printers folder contains more than one printer icon, only one of them will be the *default* device for printing. By "default," we mean the printer that's used automatically if you don't specify something else. For example, many programs allow you to print a document to the default printer by pressing Ctrl+P. The program may not ask what printer you want to use. Instead, it just sends the document to the default printer.

In the Devices and Printers folder, the default printer is indicated by a checkmark. If you want to change the default printer, right-click the printer's icon and choose Set As Default Printer. The printer or device you specified will now sport the green checkmark, and will be used for printing when you don't specify some other printer or device.

Testing a printer

If you've just installed a printer and want to test it out, follow these steps (here, we're assuming that you're already in the Devices and Printers folder):

1. Right-click the printer's icon and choose Printer Properties (be careful not to click Printing Preferences or the Printer Properties items).
2. Click the General tab.
3. At the bottom of the Properties dialog box that opens, click the Print Test Page button.
4. Wait a few seconds (few printers start immediately). The printer should print a sample page.
   - If the page prints and doesn't look garbled, click OK in each open box.
   - If nothing prints within 15 or 30 seconds, click Get Help With Printing for some tips on solving the problem.

If you had to click Get Help With Printing, follow the advice in the Help documentation first to resolve the problem. You can click the Click To Open The Print Troubleshooter link to launch the printing troubleshooter from the Control Panel. If you still can't get your printer to work, see Chapter 36 for more options. Also, keep in mind that hundreds of different makes and models of printers are available on the market, and no single rule applies to all. So, don't overlook the documentation that came with your printer or the printer manufacturer's website, which may provide troubleshooting advice.

Installing a New Printer

Before you can use a new printer, you need to connect it to the computer and install it. Earlier in this chapter, you learned how to set up a printer using the new Windows 8 Devices tool. Let's look at adding a printer using the Devices and Printers folder. Many printers give you the choice of using the USB port to connect the printer or a parallel printer port. In most cases, USB will work just fine for printing. In fact, most of today's standard computer configurations do not even have a parallel printer port, so USB might be your only option. Likewise, most new printers do not have parallel or serial port connections.

TIP

If your printer offers only a parallel port, and your computer does not have one, you can either buy an add-on adapter card to add the parallel port or buy a new printer that supports USB.

As mentioned at the beginning of this chapter, the main rule on installing a printer is to follow the instructions that came with it. Sometimes you need to install drivers first, sometimes you don't. There is no "one rule fits all" when it comes to installing printers, or any other hardware device for that matter. But in a pinch, when there are no instructions, the techniques in the following sections will be your best first guess.

Installing printers with USB and infrared connections

If you have the option to connect the printer through a USB port, or by infrared, the installation procedure should go like this:

1. Close all open programs on your Windows desktop so that you're at the Windows desktop with nothing else showing.
2. Check the documentation that came with the printer, and if directed to install the drivers before connecting the printer to the computer, do so.
3. Plug the printer into the power outlet; connect the printer to the computer with its USB connection, or configure the infrared connection as instructed by the printer manufacturer.
4. Turn on the printer, and wait a few seconds.

You should see a message in the Notification area that tells you the device is connected and ready to use. You're done. The printer is installed and ready to go.

Regardless of which of these methods you use, you'll want to test the printer, and perhaps make it the default printer, as discussed later in this chapter.

TIP

If the printer documentation tells you to install the software before you attach the printer to the computer for the first time, don't skip that step. If you connect the printer before installing the drivers, Windows might have problems detecting the printer.

Installing printers with parallel and serial port connections

If your printer is an older model (for example, an older HP LaserJet that you refuse to get rid of) that is not a typical plug-and-play USB printer, it probably connects to the computer via an LPT port or COM port. The following is the best approach to installing it on Windows 8:

1. Save any unsaved work, close all open programs, shut down Windows, and shut down your computer.
2. Plug the printer into the power outlet, connect the printer to the computer's LPT or serial port, turn on the printer, and turn on the computer.
3. When Windows restarts, look for the `Found New Hardware` notification message to appear.

It's tough to say what will happen next. You might be prompted for a disk if Windows can't find the driver for the printer. If you see a notification message indicating that the printer is installed and ready to use, you're probably done.

If your printer is not located automatically, you might want to use Google or Bing to locate instructions on the web for setting up your printer in Windows 8. Because so many different printers are available, this book cannot even begin to show how to install your particular printer. Often, the manufacturer's website includes updated device drivers and/or updated instructions on how to get legacy printers (those that are several years old) working with the latest operating systems such as Windows 8.

Use Program Compatibility for Legacy Printers

You might also try installing the printer using the Program Compatibility feature of Windows 8. You learn more about this tool in Chapter 38.

Installing a network, wireless, or Bluetooth printer

If your computer is a member of a home or small-business network, and you know of a shared printer on another computer in that network, you can use the technique described here to install that printer on your own computer. The same is true of many wireless and Bluetooth printers. But again, this procedure may not be necessary because Windows 8 often detects network printers and makes them available automatically. Be sure to check the manual that came with a wireless or Bluetooth printer for an alternative procedure before trying the method described here. Also, be sure to turn the printer on before you try to install it.

If you're trying to install a printer that's attached to another computer in your private network, make sure that both the printer and the computer to which the printer is physically connected are turned on. Make sure your network is set up and you've enabled discovery and sharing as discussed in Part X of this book. Then go to the computer that needs to access the network printer and perform the steps to follow on that computer. You install a network, wireless, or Bluetooth printer in much the same way you install a local printer. First, open the Devices and Printers folder using any technique described at the start of this chapter.

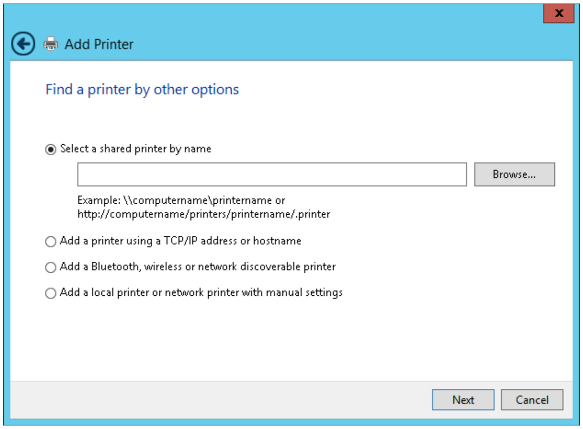
If the printer's name appears in the new Devices tool of the Settings area or in the Devices and Printers folder, you need not install it. If you want to make it the default printer, right-click its icon and choose Set As Default Printer (only available while in the Devices and Printers folder). Then, close the Devices and Printers folder and Control Panel. You'll be able to use the printer as described in Chapter 34.

If there's no sign of the printer in the Devices tool or in your Devices and Printers folder, open the Devices and Printers folder and follow these steps to install it:

1. Click Advanced Printer Setup in the toolbar. The Add Printer wizard opens.
2. If the printer is located automatically, select it and click Next to work through the wizard to install it. If the printer is not located, click The Printer That I Want Isn't Listed. The Find A Printer By Other Options window opens, as shown Figure 32.4.
3. If you know the UNC name or IP address of the printer to which you want to connect, fill in the appropriate information. Otherwise, click Browse, and navigate to the computer and printer to which you want to connect. Click the printer's name and click Select. Then click Next.
4. After the printer is successfully installed, click Next. On the next wizard page you can opt to print a test page and make the shared printer your default printer. Make your choices and click Finish.

FIGURE 32.4

Setting up a network shared printer



Find a printer by other options

● Select a shared printer by name

Example: \\computername\printername or
http://computername/printers/printername/.printer

○ Add a printer using a TCP/IP address or hostname

○ Add a Bluetooth, wireless or network discoverable printer

○ Add a local printer or network printer with manual settings

An icon for the shared printer will show in your Devices and Printers folder. If you made it the default printer, it will also show a checkmark.

Managing Printer Drivers

Virtually all hardware devices, including printers, come with a special program called a *device driver*, or just *driver* for short. The driver provides the interface between the device and a specific operating system, such as Windows 8, Windows 7, Windows Vista, or Windows XP. You need to have the correct and current printer driver installed on your computer to get your printer to work correctly.

TIP

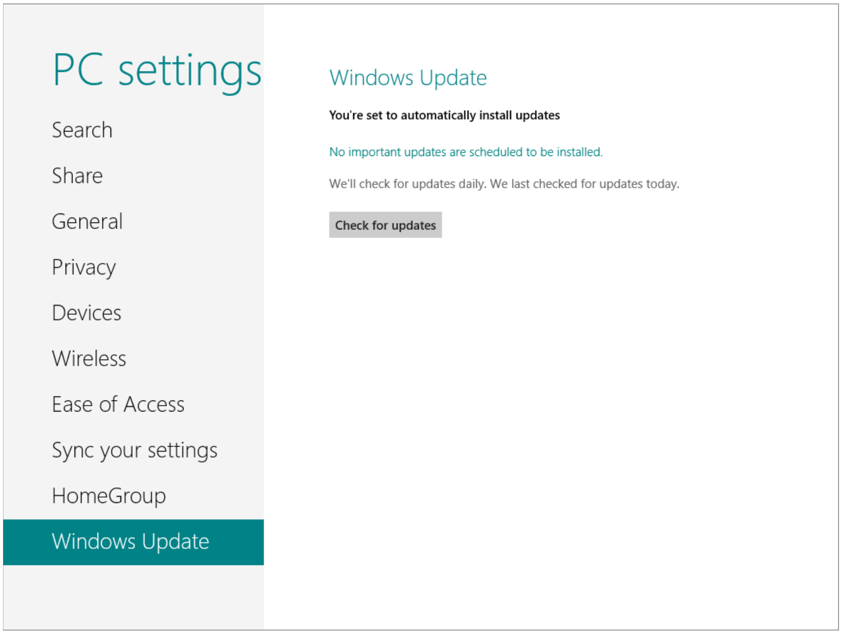
In most cases, the Windows 7 version of a printer driver will work just fine for Windows 8. However, you should always use the Windows 8 version of a printer driver if one is available to ensure you have access to all of your printer's features. Also, keep in mind that if you have Windows 8 64-bit installed, you will need 64-bit printer drivers as well.

Many printers come with the drivers on a CD. How you install a driver from the disk depends on the printer you're using, but an older printer may not even have a Windows 8 driver to offer. In that case, you'll need to look for a current driver online. Try Windows Update first by following these steps:

1. Display the Charms Bar and choose Settings.
2. Click More PC Settings.
3. Click the Windows Update link in the PC Settings list. You may have to scroll down to view the Windows Update item.
4. Click Check for Updates, which you can see in Figure 32.5.
5. When the update search is complete, click the link for available updates (if any).
6. If the driver for your printer appears, go ahead and install it per the onscreen instructions.

FIGURE 32.5

Checking Windows Update for updated printer device drivers



Windows Update

You're set to automatically install updates

No important updates are scheduled to be installed.

We'll check for updates daily. We last checked for updates today.

If Windows Update doesn't find an updated driver, it might mean your printer manufacturer hasn't posted the driver on their site yet. Browse to the printer manufacturer's website and look around for a Drivers link or Support page with downloads. Or go to the Support page and send an e-mail asking if there's an updated driver for your printer model.

Setting Default Printing Preferences

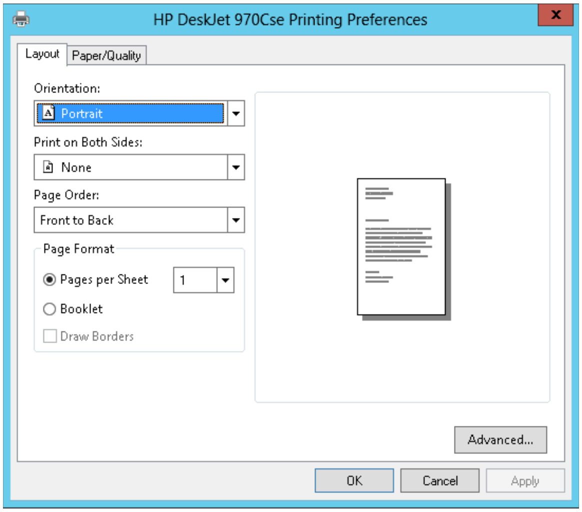
Remember the discussion early in this chapter about *printing preferences* versus *printer properties*? This section explains how to configure the default printing properties that a printer will use to print documents.

Like objects on your screen, many devices have properties that you can customize. Most printers have such properties. You can make selections from those properties to define defaults for the printer. Those default settings for properties won't be set in stone. As you see in Chapter 33, you can override the defaults any time you print a document.

As with other objects, a printer's properties are accessible from its icons. To view the properties for an installed printer, first open the Devices and Printers folder if you haven't already done so. Then, right-click the printer's icon and choose Printing Preferences. The options available to you depend on your printer. The options shown in Figure 32.6 are for an HP DeskJet 970Cse printer.

FIGURE 32.6

Sample printing preferences



HP DeskJet 970Cse Printing Preferences

Orientation: Portrait

Print on Both Sides: None

Page Order: Front to Back

Page Format

● Pages per Sheet 1

○ Booklet

☐ Draw Borders

The Printing Preferences dialog box varies from one printer to the next, and often offers multiple tabs, each with several options. The following sections cover some of the more common settings that you might want to set for your printer.

Portrait versus landscape printing

Unless your printing needs are very unusual, you'll probably want to print most of your documents in a portrait orientation. That's the orientation that normal letters and other documents use, so you'll almost always want to choose Portrait as your default orientation, as in Figure 32.6.

You can always override that default and print the occasional document in Landscape orientation (sideways, so the page is wider than it is tall). Chapter 33 covers choosing Landscape orientation on-the-fly.

Printing on both sides

On some printers, you have the option of printing a multi-page document on both sides of a piece of paper. For our example, this is located in the Print On Both Sides drop-down list. You can choose None, which prints on a single side of a piece of paper. The Flip On Long Edge option results in a multi-page document being printed front to back, also called *duplexing*. The Flip On Short Edge option prints on both sides, but is usually used for documents printed in landscape mode.

Making pages print in the right order

When you print a multiple-page document, you don't want to have to shuffle the pages around to get them in the correct order. You want the pages to come out of the printer in the right order. The Page Order property is the option that determines whether the pages are printed in the right order. The rules are as follows:

- If the pages come out of the printer face down, use Front to Back order.
- If the pages come out of the printer face up, use Back to Front order.

Said another way, if you have to reshuffle printed pages, choose whichever of those options currently *isn't* selected.

Saving time and money

Printers, as a rule, are just plain slow. That's because they're clunky mechanical devices, and it takes time to move a page through a printer and get the ink or toner onto the paper. Faster printers are typically more expensive than slower ones. But, no matter what the cost or general speed of your printer, one general rule will apply: The higher the print quality of the document you're printing at the moment, the longer it will take to print.

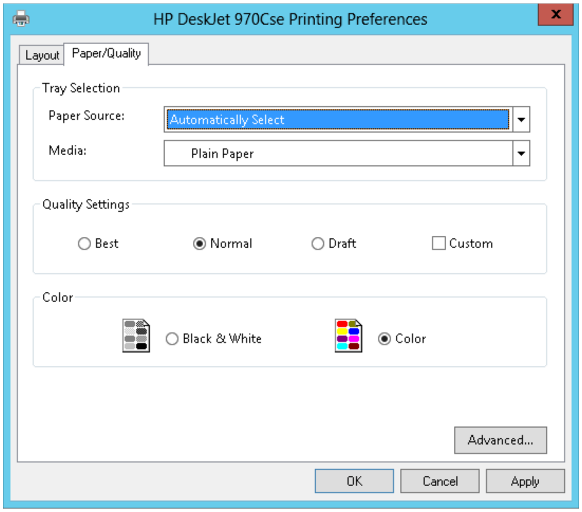
Here's another fact about printers in general. Many printers are cheap, but ink cartridges typically are not. In some cases, it is actually cheaper to buy a new printer than to buy replacement cartridges for your printer. Also, some manufacturers ship new printers with starter cartridges, which typically contain less than a full-size replacement cartridge.

The printer property that most determines how quickly your documents print and how much ink or laser toner you use per document is called *print quality*. The higher the print quality, the longer it takes to print a document, and the more ink or laser toner you use in the process. You can save time and money by doing all your day-to-day printing in Draft quality, perhaps even without color if you want to conserve color ink or laser toner.

On the DeskJet printer shown in Figure 32.7, quality settings are on the Paper/Quality tab. The Draft quality setting for the DeskJet, for example, causes the printer to use less ink when it prints, but the quality of the finished document is naturally lower. Your printer might have similar options.

FIGURE 32.7

Paper/Quality settings



HP DeskJet 970Cse Printing Preferences

Tray Selection

Paper Source: Automatically Select

Media: Plain Paper

Quality Settings

○ Best ● Normal ○ Draft ☐ Custom

Color

○ Black & White ● Color

As with other printer properties, setting the printer defaults to low-quality and black-and-white settings won't prevent you from printing the occasional color document. As you learn in Chapter 33, you can override those defaults any time you print a document. When you want to print a professional-looking report or a fine photo, just increase the print quality and activate color for the one print job.

Beyond these features, the properties vary greatly from one printer to the next. The only resource for learning all the details of your particular make and model of printer is the documentation that came with that printer, or the printer manufacturer's website.

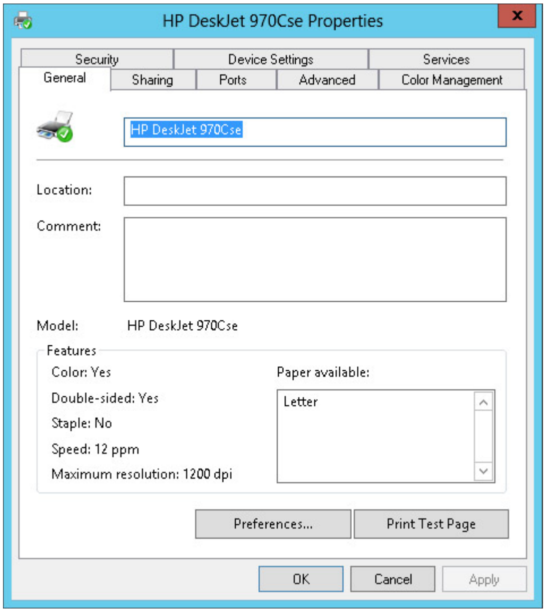
Setting Printer Properties

If you are an average Windows user, you might never need to configure printer properties for a printer. In most cases, you'll be more concerned with printing preferences that control how the printed documents look. If you are an advanced user or administrator, however, you'll likely need to understand how to configure printer properties.

To configure properties for a printer, start by opening the Devices and Printers folder, as described earlier in this chapter (you should find it on the Control Panel). Then, right-click the printer and choose Printing Properties to open a Properties dialog box similar to the one shown in Figure 32.8.

FIGURE 32.8

Sample Properties dialog box



HP DeskJet 970Cse Properties

HP DeskJet 970Cse

Location:

Comment:

Model: HP DeskJet 970Cse

Features

Color: Yes

Double-sided: Yes

Staple: No

Speed: 12 ppm

Maximum resolution: 1200 dpi

Paper available:

Letter

The tabs shown in the Properties dialog box for a printer can vary from one type of printer to another, but you will see some common settings between them. The following sections use the HP DeskJet 970Cse as an example to illustrate common concepts such as port configuration, printer pooling, spooling options, and more.

TIP

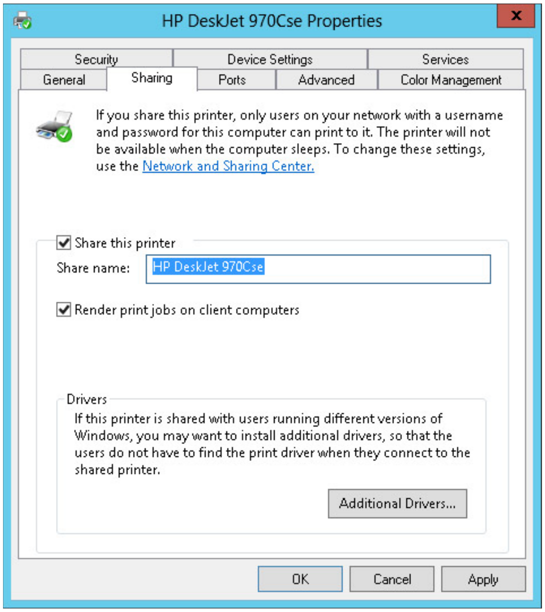
Use the Print Test Page button on the General tab of a printer's Properties dialog box to test the printer.

Configuring shared printers

The Sharing tab (see Figure 32.9) enables you to set up your printer so that you can share it with others on your home or work network. By clicking the Share This Printer option, you enable sharing and then must provide a share name for the printer. You can use the default, which is the name of the printer, or name it something more descriptive. For example, you might name it something like "Rob's Printer" or "Laser Printer in Room 100" so others in your network know which printer it is by looking at the name.

FIGURE 32.9

The Sharing tab



If you share this printer, only users on your network with a username and password for this computer can print to it. The printer will not be available when the computer sleeps. To change these settings, use the Network and Sharing Center.

☑ Share this printer

Share name: HP DeskJet 970Cse

☑ Render print jobs on client computers

If this printer is shared with users running different versions of Windows, you may want to install additional drivers, so that the users do not have to find the print driver when they connect to the shared printer.

The Additional Drivers button contains a way for you to install additional drivers to support multiple versions of Windows. For example, you might be running Windows 8 on your computer, but the person down the hallway or in another part of the house may be on Windows Vista or Windows XP still. By installing those drivers now, you can be assured that users of those other versions of Windows will have an easier time setting up to use your shared printer.

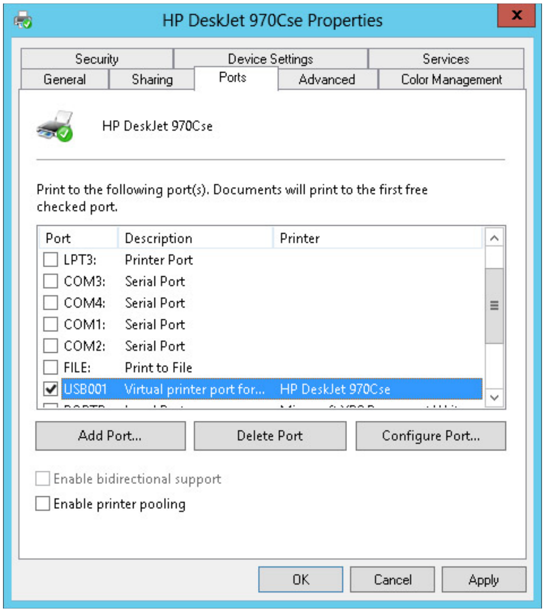
After you set up these options, click Apply. You may be prompted to shut down and restart Windows before your sharing takes effect.

Configuring printer ports

The Ports tab (see Figure 32.10) lets you view and configure the printer's ports, which define the way the printer is connected to the computer. Typically, a printer will have only one port, but it is possible to have multiple ports.

FIGURE 32.10

The Ports tab



HP DeskJet 970Cse

Print to the following port(s). Documents will print to the first free checked port.

Port	Description	Printer
☐ LPT3:	Printer Port	
☐ COM3:	Serial Port	
☐ COM4:	Serial Port	
☐ COM1:	Serial Port	
☐ COM2:	Serial Port	
☐ FILE:	Print to File	
☑ USB001	Virtual printer port for...	HP DeskJet 970Cse

☐ Enable bidirectional support

☐ Enable printer pooling

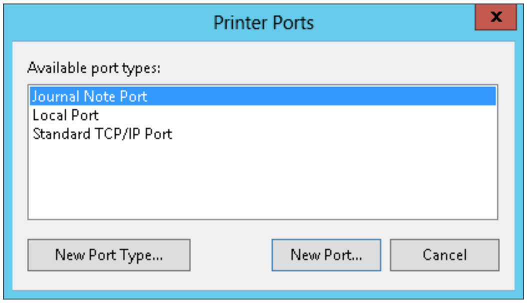
Users visit the Ports tab for two primary reasons: to configure a printer for a different network port, or to switch from one LPT port to another. You can also configure the printer to print by default to a file by selecting the File port.

Some port types offer settings that you can configure. LPT ports, for example, enable you to specify the Transmission Retry setting, which determines how long the computer will wait for a response from the printer before timing out. For serial printers on a COM port, you can specify several settings that control the speed of the port and how data flows from the computer to the printer. To configure a port, select the port from the list and click Configure Port. Use the settings in the resulting dialog box to specify settings for the port.

If you need to add a new port for a printer, click the Add Port button. Windows displays the Printer Ports dialog box shown in Figure 32.11. Select the type of port you want to create and click New Port. If the selected port type supports creating new ports, Windows displays a dialog box or a wizard (depending on the port type) that you use to specify the settings for the new port.

FIGURE 32.11

Printer Ports dialog box



Setting up printer pooling

A *printer pool* is a group of identical printers that Windows treats as a single printer instance. You can then print to the printer pool as if it were a single printer, and Windows handles sending the document to an appropriate printer in the pool. Before we explain pooling in more detail, take a look at how a *printer driver instance* differs from a *printer*.

A printer that you see listed in the Devices and Printers folder is really not a printer per se. Instead, it is an instance of a printer driver. The printer driver is the middleware between Windows and the printer hardware (the real *printer* in this discussion) that enables Windows to communicate with the printer. The phrase “instance of a printer driver” refers to a named copy of the printer driver that has its own set of properties. You can have two instances of the same printer driver with different settings, both of which control the same printer. Or, you can have one instance of a printer driver that controls more than one printer, and that’s a printer pool.

For example, assume your office has three identical network printers. You can create a printer pool using those three printers, assigning three ports to the single instance of the printer driver in your Devices and Printers folder. So, you might have one HP LaserJet 1320N network printer in your Devices and Printers folder, for example, but that instance of the driver could actually print to any of the three printers.

Why would you want to do that? First, you need to manage only one instance of the printer driver in your computer, which can simplify printer and document management, particularly if you typically use the same settings for each one. Second, you don't have to worry about selecting a printer when you print. Instead, assuming you have assigned the printer driver instance for the pool as your default printer, you just click Print and send the document on its way. Windows decides which printer to send the document to.

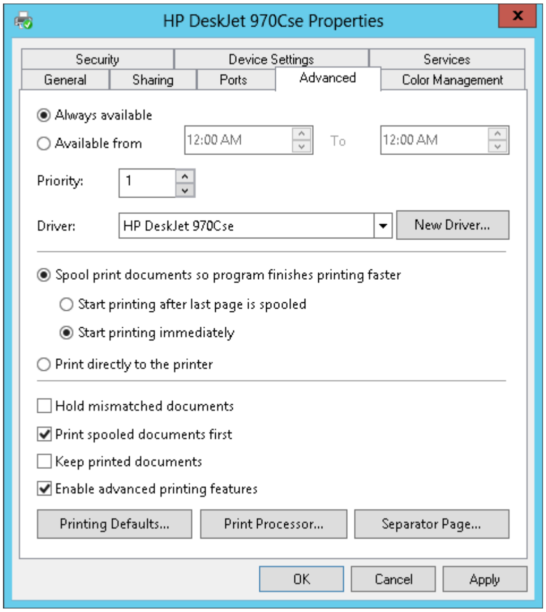
To set up a printer pool, first install the printer driver for the printers in the pool. Then, open the properties for the printer from the Devices and Printers folder and select the Enable Printer Pooling option on the Ports tab. When that option is selected, you can select multiple ports from the ports list. Add ports as needed (such as additional TCP/IP ports for network printers), and select the ports for all of the printers in the pool. Then, click OK.

Configuring printer availability

You can specify when a printer is available. For example, you might want to restrict access to a printer to business hours to keep people from using it when no one is around. Whatever the reason, you configure printer availability from the Advanced tab of the printer properties (see Figure 32.12).

FIGURE 32.12

The Advanced tab


HP DeskJet 970Cse Properties
Security
Device Settings
Services
General
Sharing
Ports
Advanced
Color Management
New Driver...
Printing Defaults...
Print Processor...
Separator Page...
OK
Cancel
Apply

● Always available

○ Available from 12:00 AM To 12:00 AM

Priority: 1

Driver: HP DeskJet 970Cse

● Spool print documents so program finishes printing faster

○ Start printing after last page is spooled

● Start printing immediately

○ Print directly to the printer

☐ Hold mismatched documents

☑ Print spooled documents first

☐ Keep printed documents

☑ Enable advanced printing features

By default, a printer is configured to be always available. To limit its availability, click the Available From option; then use the spin controls to set the start and end times for the time range when the printer will be available. If you or a network user of a shared printer sends a document to a printer when it is not available, the document is held in the printer queue on the sending computer until the printer becomes available.

Setting other advanced options

As Figure 32.12 illustrates, Windows offers several other advanced options for configuring a printer. For example, the spooling options determine how the printer driver sends data to the printer. The option Spool Print Documents So Program Finishes Printing Faster causes documents to be spooled to an on-disk queue, where it waits until the printer driver can send it to the printer. To the printing application, printing is complete as soon as the last page of the document is sent to the queue and you can then continue using the program.

Alternatively, you can configure the printer driver to print directly to the printer, bypassing the on-disk document queue. The downside to this option is that you can't use the program until it finishes printing, which can potentially take much longer than sending the document to a queue if the document is complex or very large.

In most cases, today's computers are fast enough and have enough disk capacity that you will never need to print directly to the printer. If you are trying to print a huge document and have very little free space on your disk, however, sending the document directly to the printer could enable the document to print when it might not otherwise.

Following are some additional settings on the Advanced tab:

- **Hold Mismatched Documents:** The spooler checks the configuration of the printer against the document setup before sending the document to the printer. If the document setup doesn't match the printer, the document is held in the queue and not sent to the printer. You can then address the configuration mismatch, and restart the document from the queue to send it to the printer.
- **Print Spooled Documents First:** Documents that have completed spooling to the queue are printed before documents that are still spooling, even if they have a lower priority.
- **Keep Printed Documents:** Documents remain in the queue even after they are printed, enabling you to restart the document from the queue if needed to reprint them.

These are not the only properties available for a printer. We cover other properties, such as the sharing properties, in other chapters.

Wrap-Up

That about wraps it up for installing and managing printers. In the next chapter, you learn how to print documents, choose color and quality settings on-the-fly, and so forth. The main points from this chapter are as follows:

- Many makes and models of printers exist. Your best resource for your specific printer is the documentation that came with that printer.
- Installed printers, and options for installing printers, are in the new Windows 8 Devices tool, or in your Devices and Printers folder.
- If you have access to multiple printers, right-click the icon for the printer you want to use on a day-to-day basis and choose Set As Default Printer.
- To test a printer, right-click its icon and choose Printer Properties. Then, click the Print Test Page button.
- To connect a printer by USB, don't shut down the computer. Instead, leave the computer on, connect the printer to the computer, and then turn the printer on. Check the printer documentation to see whether you need to install the drivers before connecting the printer.
- The typical scenario for installing a printer that connects to a printer port (LPT port) is to shut down the computer, connect the printer and turn it on, and then restart the computer.
- To ensure that your printer driver is appropriate for your operating system, check the Windows Update site and the printer manufacturer's website.
- To set default properties for day-to-day printing, right-click the printer's icon and choose Printing Preferences.

CHAPTER 33

Printing Documents and Screenshots

IN THIS CHAPTER

- **Printing documents**
- **Choosing print options for a single document**
- **Printing the screen**
- **Using Print Preview**

Windows 8, itself, doesn't print documents, primarily because Windows 8 can't even open documents. You use programs, not Windows, to print documents. Typically, you open the document first by clicking or double-clicking its icon. Then, you print the document from the program that opens.

This chapter looks at different ways to print documents. As everyone knows, printer ink, toner, and paper are expensive. For that reason, we'll be sure to present some techniques to help you get the most for your printing buck.

Printing a Document

If you have a printer, using it should be easy. First, you want to make sure that the printer is turned on, has paper, and is ready to go. Then if the document you want to print is open and on the screen, do whichever of the following is most convenient:

- Choose File ➪ Print from the program's menu bar.
- Click the Print button in the program's toolbar.
- Press Ctrl+P.

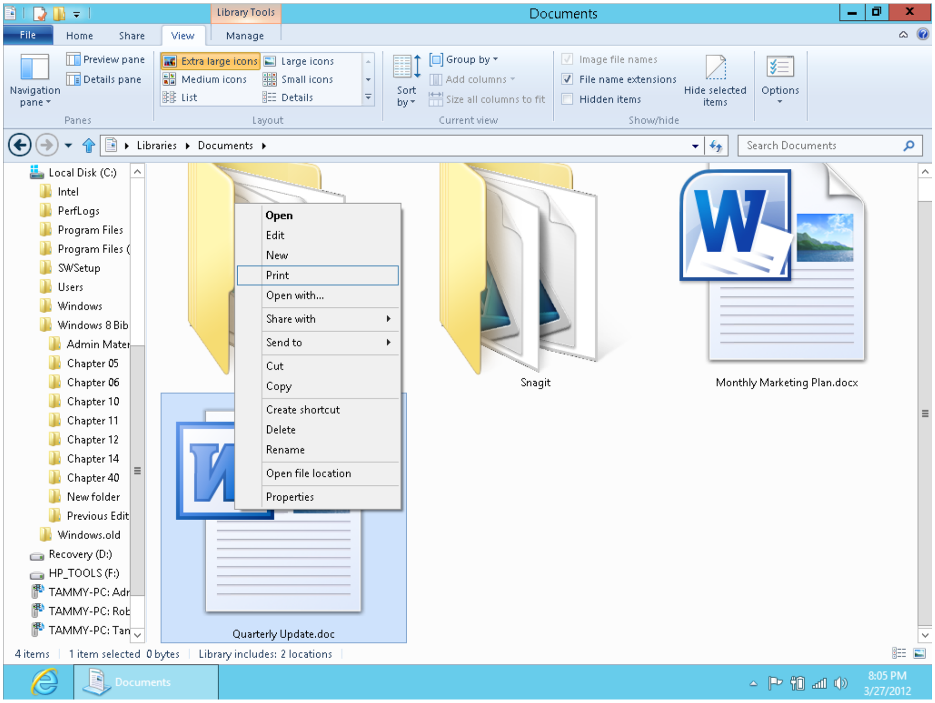
In many cases, you can print a document, or several documents, without first opening the document. To print a single document that way, right-click its icon and choose Print. To print multiple documents, select the icons first, using any technique from Chapter 28. Then click the Print button in the toolbar. Or, right-click any selected icon and choose Print, as shown in Figure 33.1.

TIP

If you select different types of files (such as Word and Excel documents), you can't print them from the context menu. You can print a group of files from the context menu only if they are of the same type.

FIGURE 33.1

Printing multiple closed documents


Library Tools
Documents
File
Home
Share
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Libraries
Documents
Search Documents
Local Disk (C:)
Intel
PerfLogs
Program Files
Program Files (
SWSetup
Users
Windows
Windows 8 Bib
Admin Mater
Chapter 05
Chapter 06
Chapter 10
Chapter 11
Chapter 12
Chapter 14
Chapter 40
New folder
Previous Edit
Windows.old
Recovery (D:)
HP_TOOLS (F:)
TAMMY-PC: Adr
TAMMY-PC: Rob
TAMMY-PC: Tan
Open
Edit
New
Print
Open with...
Share with
Send to
Cut
Copy
Create shortcut
Delete
Rename
Open file location
Properties
Snagit
Monthly Marketing Plan.docx
Quarterly Update.doc
4 items
1 item selected 0 bytes
Library includes: 2 locations
Documents
8:05 PM
3/27/2012

What happens next depends on what program you're using, and which method you used. Often, right-clicking a closed document or pressing Ctrl+P starts the print job automatically. No further input is required.

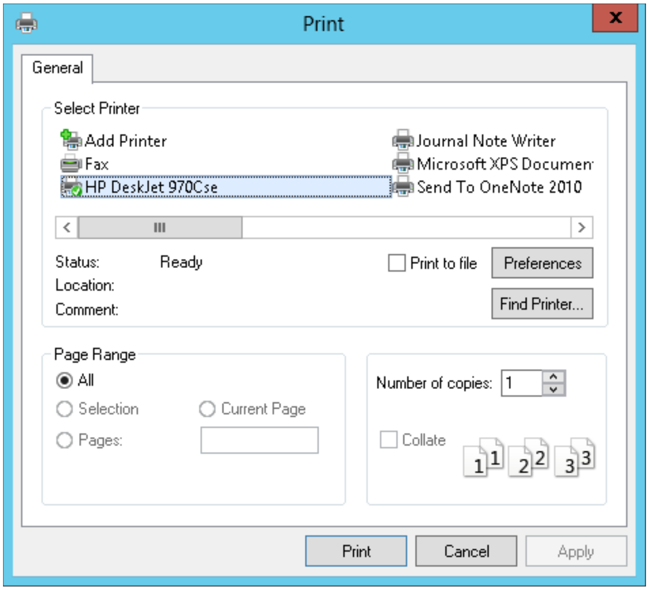
TIP

Don't expect the document to start printing immediately. There's always some prep work to be done, and that will take a few seconds.

In most cases, particularly with programs that do not meet the Microsoft Office 2010 application tab specifications, printing a document first takes you to the Print dialog box. Exactly how the Print dialog box looks varies depending on the program and printer you're using. Figure 33.2 shows an example of a Print dialog box.

FIGURE 33.2

The Print dialog box


Print
General
Select Printer
Add Printer
Fax
Journal Note Writer
Microsoft XPS Documen
Send To OneNote 2010
Location:
Comment:
Preferences
Find Printer...
Page Range
Collate
Print
Cancel
Apply

HP DeskJet 970Cse

Status: Ready

☐ Print to file

● All

○ Selection ○ Current Page

○ Pages:

Number of copies: 1

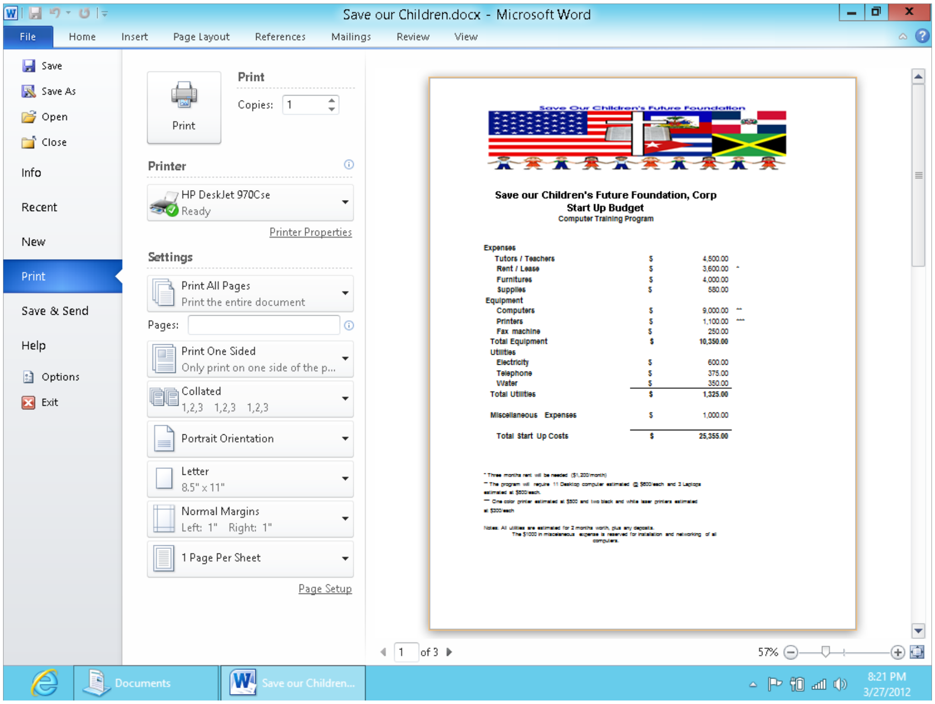
☐ Collate

In the Print dialog box, click the Print or OK button to print to whatever printer is currently selected near the top of the dialog box. That's the simple approach, if you want to print the entire document immediately to the default printer. But as you can see in the sample Print dialog box, you may also have quite a few options to choose from before you click the Print or OK button.

For newer programs that follow the Microsoft Office 2010 application tab specification, the print features are shown on a tab, not a dialog box. Figure 33.3 shows an example of this in Microsoft Word 2010.

FIGURE 33.3

Example of the Print tab in Microsoft Word 2010


Save our Children.docx - Microsoft Word
File
Home
Insert
Page Layout
References
Mailings
Review
View
Save
Save As
Open
Close
Info
Recent
New
Print
Save & Send
Help
Options
Exit
Print
Printer
Printer Properties
Settings
Page Setup
Documents
Save our Children...
8:21 PM
3/27/2012

Copies: 1

HP DeskJet 970Cse
Ready

Print All Pages
Print the entire document

Pages:

Print One Sided
Only print on one side of the p...

Collated
1,2,3 1,2,3 1,2,3

Portrait Orientation

Letter
8.5" x 11"

Normal Margins
Left: 1" Right: 1"

1 Page Per Sheet

1 of 3

57%

Save Our Children's Future Foundation

Save our Children's Future Foundation, Corp
Start Up Budget
Computer Training Program

Expenses			
Tutors / Teachers	$	4,500.00	
Rent / Lease	$	3,600.00	*
Furnitures	$	4,000.00	
Supplies	$	580.00	
Equipment			
Computers	$	9,000.00	**
Printers	$	1,100.00	***
Fax machine	$	250.00	
Total Equipment	$	10,350.00	
Utilities			
Electricity	$	600.00	
Telephone	$	375.00	
Water	$	350.00	
Total Utilities	$	1,325.00	
Miscellaneous Expenses	$	1,000.00	
Total Start Up Costs	$	25,355.00	

With the Print tab, you see many of the same options you do in a dialog box. You also get an added benefit of seeing a sample view of the document you want to print. This allows you to preview the document before you print it. In fact, you can navigate through your document's pages by using the Next Page tools below the document preview. When you get ready to print, click the Print button at the top left of the tab.

TIP

See "Printing Pictures" in Chapter 23 for specifics on printing photos and other pictures.

Common printing options

Because different programs offer different Print dialog boxes or Print tabs, we can't really say exactly what you'll see when you print a document. However, the options shown in the sample dialog box are fairly common. Those common options include:

- **Select Printer:** If you have access to multiple printers (for example, when you're connected to a network), choose the printer you want to use.
- **Page Range:** Choose which pages you want to print, ranging from All (the entire document), the Current Page (the page visible on your screen), Selection (only the text and pictures you selected in the document prior to choosing the Print command), or Pages (define a specific page, such as 1, or a range of pages, such as 2–5, to print only pages 2, 3, 4, and 5).
- **Manual Duplex:** Print pages back-to-back on printers that don't have the capability to do that automatically. ("Duplex" is the nerd word for "back to back.") When you choose this option, odd-numbered pages will be printed first. You'll then be prompted to reinsert those pages, so the remaining pages can be printed on their backs. If you print to a printer or copier that can print on both sides, you do not have to manually feed pages back in. The printing device does all the work for you.
- **Number of Copies:** Specify the number of copies to print.
- **Collate:** If this is selected, and you print multiple copies, pages are collated. If you print multiple copies, and clear the Collate option, you'll get multiple page 1s, followed by multiple page 2s, and so forth.

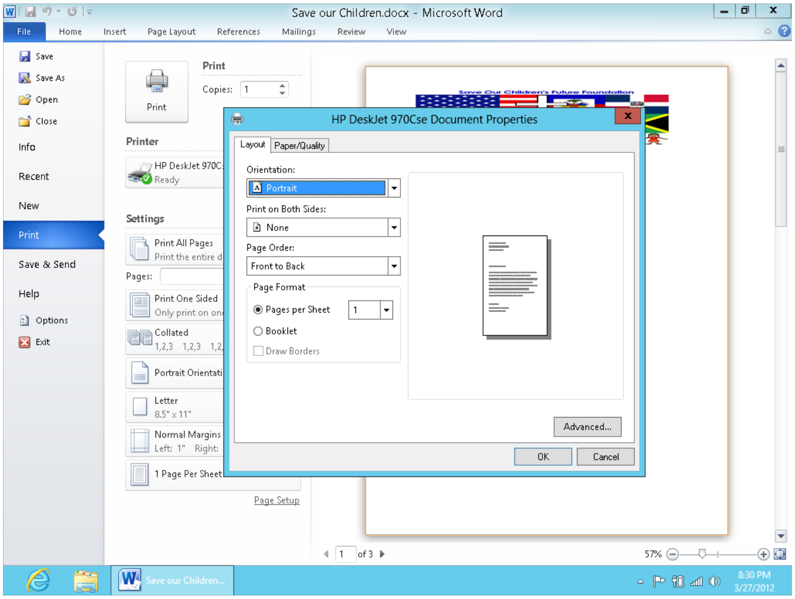
Choosing a print quality and other options

The general options that appear in the Print dialog box or Print tab are almost universal. Depending on the make and model of your printer, you might have some other options to choose from. For example, you might be able to control the print quality of a document, opting for a quick draft or a time-consuming but better-quality job.

In most cases, you click the Properties button in the Print dialog box or the Printer Properties link on a Print tab to get to those options. Figures 33.4 and 33.5 show examples from an HP LaserJet 970 printer. The figures show options on both of the tabs in that dialog box.

FIGURE 33.4

Sample Printer Properties dialog box showing the Layout tab



HP DeskJet 970Cse Document Properties

Orientation: Portrait

Print on Both Sides: None

Page Order: Front to Back

Page Format

● Pages per Sheet 1

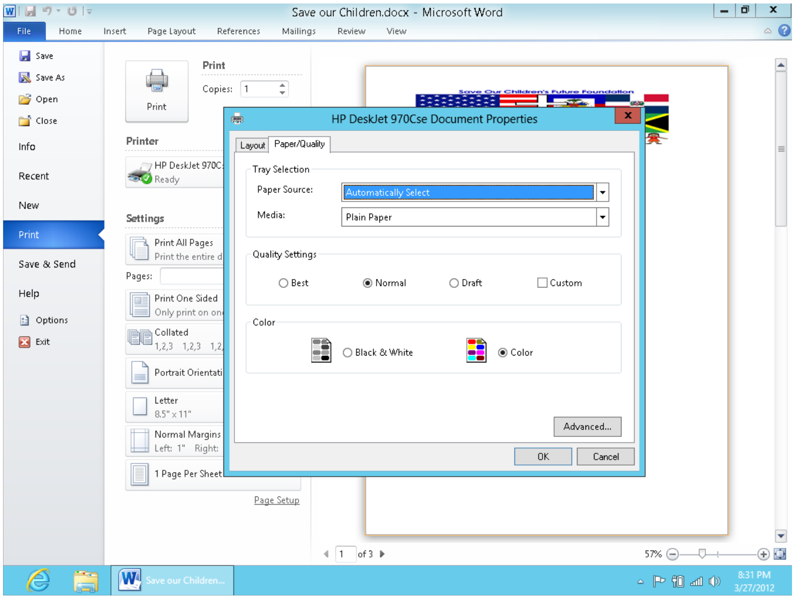
○ Booklet

☐ Draw Borders

Save our Children.docx - Microsoft Word
File
Home
Insert
Page Layout
References
Mailings
Review
View
Save
Save As
Open
Close
Info
Recent
New
Print
Save & Send
Help
Options
Exit
Print
Copies: 1
Printer
HP DeskJet 970C
Ready
Settings
Print All Pages
Print the entire d
Pages:
Print One Sided
Only print on one
Collated
1,2,3 1,2,3 1,2,
Portrait Orientati
Letter
8.5" x 11"
Normal Margins
Left: 1" Right:
1 Page Per Sheet
Page Setup
Layout
Paper/Quality
Advanced...
OK
Cancel
1 of 3
57%
Save our Children...
8:30 PM
3/27/2012

FIGURE 33.5

Sample Printer Properties dialog box showing the Paper/Quality tab



HP DeskJet 970Cse Document Properties

Tray Selection

Paper Source: Automatically Select

Media: Plain Paper

Quality Settings

○ Best ● Normal ○ Draft ☐ Custom

Color

○ Black & White ● Color

Save our Children.docx - Microsoft Word
File
Home
Insert
Page Layout
References
Mailings
Review
View
Save
Save As
Open
Close
Info
Recent
New
Print
Save & Send
Help
Options
Exit
Print
Copies: 1
Printer
HP DeskJet 970C
Ready
Settings
Print All Pages
Print the entire d
Pages:
Print One Sided
Only print on one
Collated
1,2,3 1,2,3 1,2,
Portrait Orientati
Letter
8.5" x 11"
Normal Margins
Left: 1" Right:
1 Page Per Sheet
Page Setup
Layout
Paper/Quality
Advanced...
OK
Cancel
1 of 3
57%
Save our Children...
8:31 PM
3/27/2012

The following are some of the common options you'll find in a Printer Properties dialog box:

- **Orientation:** Portrait prints in the normal vertical orientation; Landscape prints horizontally across the page.
- **Print On Both Sides:** Same as duplex, which allows you to print on two sides of a page.
- **Page Order:** The Front To Back option prints pages from lowest page number to highest. It keeps printed pages in the correct order if those printed pages come out of the printer face down. Back To Front prints pages from last to first, which keeps them in order if the printed pages come out face up.
- **Pages Per Sheet:** If you specify a number greater than 1, multiple pages are reduced to fit on the page. For example, choosing 2 prints two document pages on each piece of paper, making each document half its actual size.
- **Booklet:** Prints your document in booklet format.
- **Paper Source:** If your printer has more than one paper feeder, use this option to choose which one you want to use. For example, if you can keep regular paper in one printer bin and envelopes in a second bin, choose the second bin whenever you want to print envelopes.
- **Media:** Lets you specify the type or quality of paper you're printing on, such as Plain Paper or Premium Photo Paper.
- **Quality Settings:** To conserve ink, consider choosing this option and using a low-quality setting, such as Draft, and perhaps Black And White or Grayscale printing, for day-to-day printing. Use higher-quality settings and color for more professional-looking documents and photos.
- **Color:** Includes color and black and white settings.

TIP

If you have to change print options often, consider setting the printer's default properties to the options you select often. See Chapter 34 for details.

After you've made your selections in the Printer Properties dialog box, click OK to return to the Print dialog box or Print tab. There, you can choose additional options. Or, click the OK or Print button to start printing.

If you change your mind after starting the print job, there's no simple "undo" that can stop the print job. You'll have to open the printer's icon in the Printers folder, and then right-click the document job and choose Cancel.

NOTE

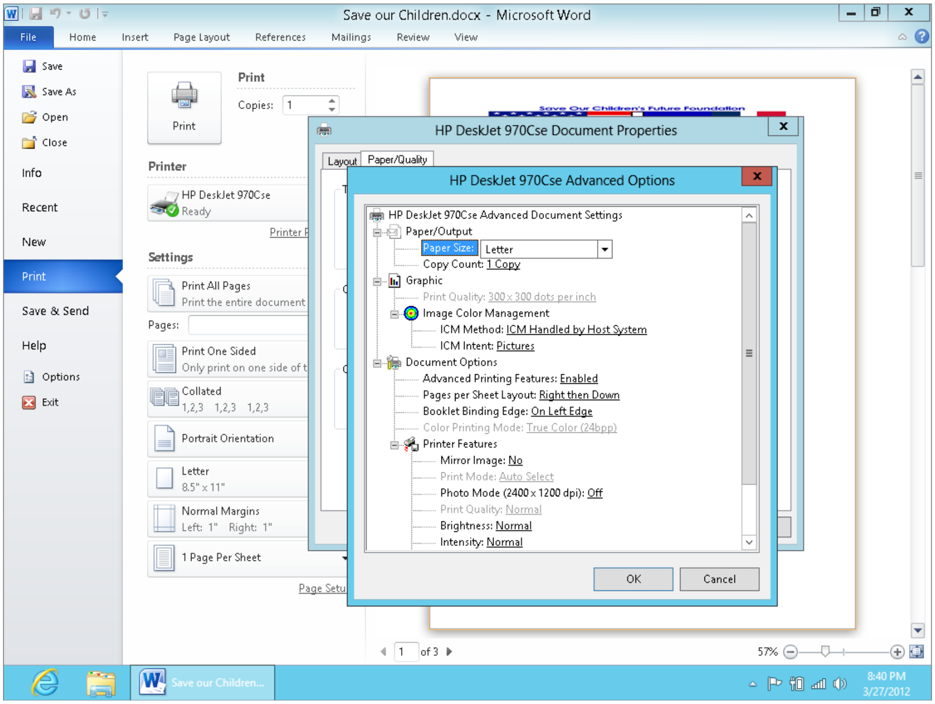
See Chapter 36 for information on canceling a print job.

Still more print options

Depending on the program and printer you're using, you might also see an Advanced or Options button in the Print dialog box. Clicking that button takes you to still more options like the ones shown in Figure 33.6.

FIGURE 33.6

Still more printing options


Save our Children.docx - Microsoft Word
File
Home
Insert
Page Layout
References
Mailings
Review
View
Save
Save As
Open
Close
Info
Recent
New
Print
Save & Send
Help
Options
Exit
Print
HP DeskJet 970Cse Document Properties
Layout
Paper/Quality
HP DeskJet 970Cse Advanced Options
OK
Cancel
Save our Children...
8:40 PM
3/27/2012

Copies: 1

Printer: HP DeskJet 970Cse Ready

Settings:
- Print All Pages — Print the entire document
- Print One Sided — Only print on one side of t
- Collated — 1,2,3 1,2,3 1,2,3
- Portrait Orientation
- Letter — 8.5" x 11"
- Normal Margins — Left: 1" Right: 1"
- 1 Page Per Sheet

HP DeskJet 970Cse Advanced Document Settings
- Paper/Output
  - Paper Size: Letter
  - Copy Count: 1 Copy
- Graphic
  - Print Quality: 300 x 300 dots per inch
  - Image Color Management
    - ICM Method: ICM Handled by Host System
    - ICM Intent: Pictures
- Document Options
  - Advanced Printing Features: Enabled
  - Pages per Sheet Layout: Right then Down
  - Booklet Binding Edge: On Left Edge
  - Color Printing Mode: True Color (24bpp)
  - Printer Features
    - Mirror Image: No
    - Print Mode: Auto Select
    - Photo Mode (2400 x 1200 dpi): Off
    - Print Quality: Normal
    - Brightness: Normal
    - Intensity: Normal

Printing the Screen

If you were around in the early days of computers with text screens, you might remember a time when you could print whatever was on the screen just by pressing the Print Screen key (perhaps abbreviated PrtScn, Prnt Scrn, or something like that). This was a so-called *screen dump*. It doesn't work that way in Windows. You can't print the screen directly to the printer. But you can *capture* the screen and print it from there.

With Windows 8, you have two ways to capture a screen using the Print Screen key. The first way is the easiest and quickest. When you are ready to capture something onscreen, press Windows+Print Screen. This automatically captures the screen, names it for you, gives it a PNG (Portable Network Graphic format) file extension, and saves it to the Picture folder.

Windows 8 names the file Screenshot.png. You can continue to do this as needed and Windows simply adds a new sequential number to each screen shot, such as Screenshot (2).png, Screenshot (3).png, and so on. Notice that your first screenshot will be named without a number. Just assume it is the first screenshot you captured. Using this method, Windows 8 captures everything on the screen. When you get ready to print the screen capture, open the file in a supporting graphics program (Windows Paint is free and it is on your computer by default) and choose the Print command.

Another way to capture a screenshot is to use the Print Screen key, which sends a copy of the screen capture to the Windows Clipboard, from which you can then paste the capture into a program. You can print the capture from there with the following steps:

1. Get the screen to look the way you want.
2. To capture the entire screen, make sure no window is selected and then press the Print Screen key. To capture only the active window, dialog box, or message, select it to bring it to the foreground and then press Alt+Print Screen.

NOTE

If your keyboard has a Function Lock (or F Lock) key, it may need to be off for the PrtScn key to work. Some notebook computers require that you hold down an Fn or similar key while pressing PrtScn.

3. Open your favorite graphics program.
4. Press Ctrl+V or choose Edit ➪ Paste from the graphics program's menu bar.

TIP

If you don't have a favorite graphics program, you can use the simple Paint program that comes with Windows. Show the Charms and choose Search. Type **Paint** and click Windows Paint.

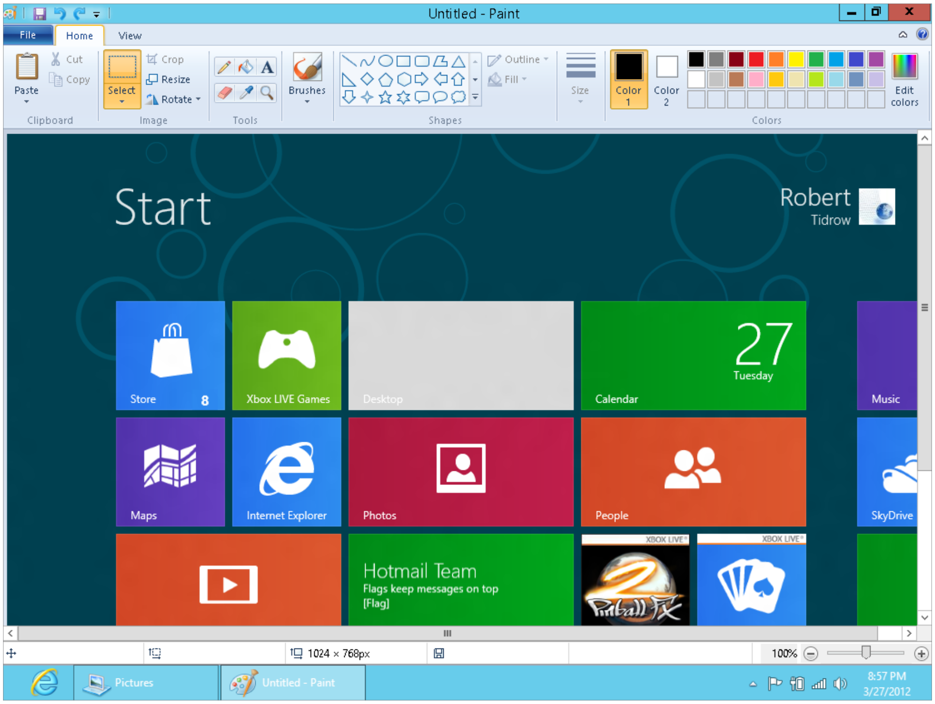
A snapshot of the screen or program window opens in your graphics program. If your graphics program allows it, zoom out to get a more complete view. For example, Figure 33.7 shows a screenshot in Paint.

TIP

In some graphics programs, you can spin your mouse wheel to change the image's magnification. In others, you have to choose some option from the program's View menu, such as View ➪ Zoom.

FIGURE 33.7

Screenshot in a graphics program


Untitled - Paint
File
Home
View
Paste
Cut
Copy
Select
Crop
Resize
Rotate
Brushes
Outline
Fill
Size
Color 1
Color 2
Edit colors
Clipboard
Image
Tools
Shapes
Colors
Start
Robert
Tidrow
Store
Xbox LIVE Games
Desktop
27
Tuesday
Calendar
Music
Maps
Internet Explorer
Photos
People
SkyDrive
Hotmail Team
Flags keep messages on top
[Flag]
XBOX LIVE
1024 × 768px
100%
Pictures
Untitled - Paint
8:57 PM
3/27/2012

Once the screenshot is in a graphics program, print it as you would any other open document, using any technique described earlier in this chapter. If you plan to use the screenshot as a picture in a web page, save it as a JPEG or PNG file (if possible), using the Save As Type option in the Save As dialog box.

TIP

As an alternative to using the technique just described, you can use Windows 8's Snipping Tool to capture and annotate screenshots. You can use the Snipping Tool by showing the Charms and choosing Search. Type **snip** and then click Snipping Tool. It's fairly easy to use, but click the help question mark to learn more about it if you need some guidance.

Using Print Preview

Many programs offer a Print Preview feature that enables you to see how a document will look on paper before you actually print it. That way, you'll know what to expect and avoid unpleasant surprises and wasted paper, such as expecting to print one page and ending up with twenty pages!

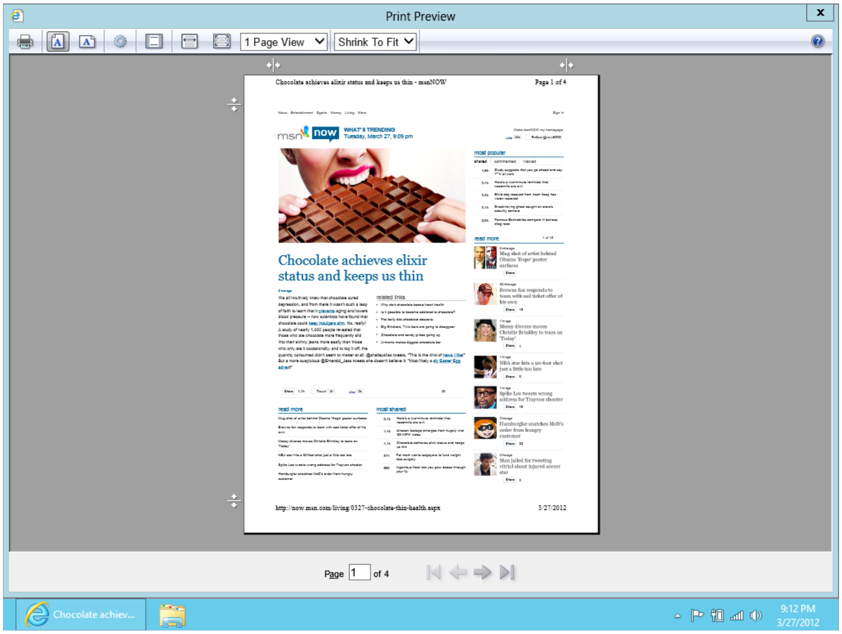
Many newer programs that use the tab specification similar to Microsoft Office 2010 have the Print Preview built in to the Print tab. Other programs use a separate Print Preview tool.

To use Print Preview, you'll need to open the document first or browse to the web page you want to print. Then, choose Tools ➪ Print ➪ Print Preview (or similar command sequence) from the program's menu bar (assuming that the program you're using has a Print Preview feature, such as the one in Internet Explorer). Or, right-click the page and choose Print Preview.

For example, suppose that you're considering printing a web page that you're currently viewing. Before you start printing, you'd like to know how many pages will print and how things will look on paper. Click the Tools icon and choose Print ➪ Print Preview to see how the page(s) will look printed. At the bottom of the window is a `Page x of y` indicator, where `y` tells you how many pages will print. Use the Show Multiple Pages drop-down list in the toolbar to display multiple pages, as in the example shown in Figure 33.8.

FIGURE 33.8

Internet Explorer's Print Preview window


Print Preview
1 Page View
Shrink To Fit
Chocolate achieves elixir status and keeps us thin - msnNOW
Page 1 of 4
msn now
Chocolate achieves elixir status and keeps us thin
http://now.msn.com/living/0327-chocolate-thin-health.aspx
3/27/2012
Page 1 of 4
Chocolate achiev...
9:12 PM
3/27/2012

Use the arrows at the bottom of Print Preview to scroll through individual pages. Point to any button in the toolbar to see its name and purpose. To print straight from the Print Preview window, click the Print button at the left side of the toolbar. The Print dialog box will open. From there you should be able to choose specific pages to print. When you're finished with Print Preview, close it to return to the original program.

Wrap-Up

Printing should be a simple matter of choosing File ➪ Print from a program's menu bar, or right-clicking a document and choosing Print. Here's a quick recap of the main points of this chapter:

- To print the document you're currently viewing, choose File from that program's menu bar. Or, click the Print button in its toolbar or press Ctrl+P.
- To print a closed document from its icon, right-click that icon and choose Print.
- When the Print tab or Print dialog box opens, you can choose a printer, a print quality, and other settings before you print.
- To print the screen, press Windows+Print Screen and open the file in a graphics program. You also can first capture the entire screen by pressing the Print Screen key. Or, press Alt+Print Screen to capture just the current window. Then, open any graphics program and press Ctrl+V. Finally, print the screenshot from that program.
- To see what an open document will look like before you print it, choose File ➪ Print Preview from the program's menu bar.

CHAPTER 34

Managing Print Jobs

IN THIS CHAPTER

- How printing works
- Making a shortcut to a printer
- Stopping the printer
- Printing XPS documents
- Learning how to print from Windows 8 apps

When you print a document, there's more going on than you might expect. The printer doesn't immediately start printing. Instead, the computer needs to convert your document to a set of instructions that tells the printer what to do. Then, those printer instructions have to be sent to the printer in small chunks because the printer is a slow mechanical device compared to a computer, which is much faster.

Each document you print becomes a *print job* that has to wait its turn in line if other documents are already printing, or waiting to be printed. Most of this activity takes place in the background, meaning that you don't have to do anything to make it happen. In fact, you can just go about using your computer normally. There's no need to wait for the document to finish printing.

How Printing Works

When you print a document, quite a bit of work takes place invisibly in the background before the printer even "knows" there's a document to print. First, a program called a *print spooler* (or *spooler* for short) makes a special copy of the document that contains instructions that tell the printer exactly what to do. Those instructions don't look anything like the document you're printing. They're just codes that tell the printer what to do so that the document it spits out ends up looking like the document that you printed.

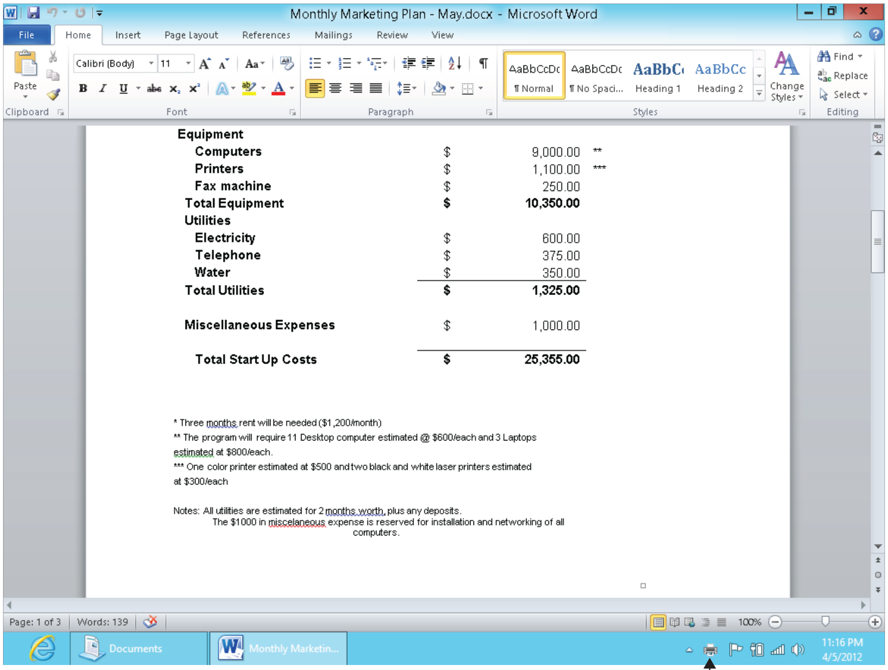
After the spooler creates the special printer file, it can't just hand the whole thing off to the printer as one giant set of instructions. Most printers are slow mechanical devices that can hold only a small amount of information at a time in a *buffer*. The buffer is a storage area within the printer that holds the data to be printed until it is printed. The amount of data that can reside in the buffer depends on the size of the buffer. In some cases, the buffer will hold a large number of pages. In others, it might hold only a single page, or in the case of a complex document such as a photo, and a relatively small buffer, only part of the page might fit in the buffer at one time.

Furthermore, when the spooler has finished creating the special printer file, another document may already be printing. There may even be several documents waiting to be printed. So, the spooler has to put all the print jobs into a *queue* (line). All of this activity takes the computer time (not *your* time, per se). And because each document has to be fed to the printer in small chunks, there's often time for you to do things such as cancel documents you've told Windows to print but that haven't yet been fully printed.

To manage those print jobs, you use the *print queue*. If a document is already printing, or waiting to print, you'll see a tiny printer icon in the Notification area. When you point to that icon, the number of documents waiting to be printed appears in a tooltip, as in the example shown in Figure 34.1. Double-click that small icon to open the print queue.

FIGURE 34.1

Printer icon in the Notification area


Monthly Marketing Plan - May.docx - Microsoft Word
File
Home
Insert
Page Layout
References
Mailings
Review
View
Paste
Clipboard
Calibri (Body)
11
Font
Paragraph
AaBbCcDc
¶ Normal
AaBbCcDc
¶ No Spaci...
AaBbC
Heading 1
AaBbCc
Heading 2
Change Styles
Styles
Find
Replace
Select
Editing
Page: 1 of 3
Words: 139
100%
Documents
Monthly Marketin...
11:16 PM
4/5/2012

Equipment			
Computers	$	9,000.00	**
Printers	$	1,100.00	***
Fax machine	$	250.00	
Total Equipment	**$**	**10,350.00**	
Utilities			
Electricity	$	600.00	
Telephone	$	375.00	
Water	$	350.00	
Total Utilities	**$**	**1,325.00**	
Miscellaneous Expenses	$	1,000.00	
Total Start Up Costs	**$**	**25,355.00**	

* Three months rent will be needed ($1,200/month)
** The program will require 11 Desktop computer estimated @ $600/each and 3 Laptops estimated at $800/each.
*** One color printer estimated at $500 and two black and white laser printers estimated at $300/each

Notes: All utilities are estimated for 2 months worth, plus any deposits.
The $1000 in miscelaneous expense is reserved for installation and networking of all computers.

Printer icon

As an alternative to using the Notification area, you can get to the print queue from the Devices and Printers folder. As mentioned in Chapter 32, to open your Devices and Printers folder press Windows+X, click Control Panel, and click View Devices And Printers.

Once you're in the Devices and Printers folder, double-click the printer's icon to open its print queue.

TIP

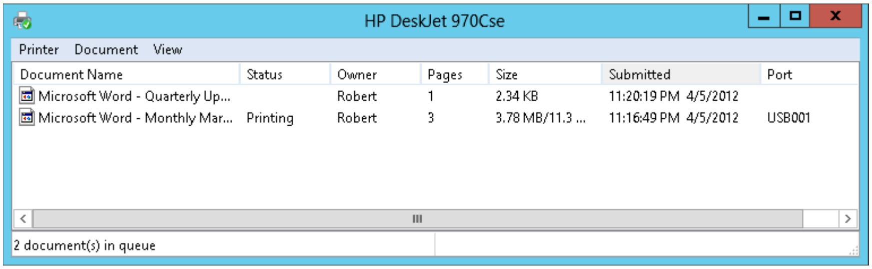
To make a desktop shortcut to a specific printer, right-click the printer's icon in the Devices and Printers folder and choose Create Shortcut. Any time you need to open the printer's queue, just double-click (or click) that shortcut icon on the desktop.

Managing Print Jobs

The print queue for a printer contains all the documents that are currently printing or waiting to print. Figure 34.2 shows an example where we've already told Windows to print two documents. The first document we sent (which happens to be the document listed on the bottom of the list in this example) is currently printing. The other is waiting in line for its turn.

FIGURE 34.2

Sample documents in a print queue



Document Name	Status	Owner	Pages	Size	Submitted	Port
Microsoft Word - Quarterly Up...		Robert	1	2.34 KB	11:20:19 PM 4/5/2012	
Microsoft Word - Monthly Mar...	Printing	Robert	3	3.78 MB/11.3 ...	11:16:49 PM 4/5/2012	USB001

2 document(s) in queue

Managing a single document

To pause or cancel a specific print job, right-click its line in the print queue and choose one of the following options from the shortcut menu that appears:

- **Pause:** Stops printing the document until you restart it.
- **Restart:** Restarts the paused print job.
- **Cancel:** Cancels the print job so that it doesn't print and removes the job from the print queue.
- **Properties:** Provides detailed information about the print job. You can also set the document's priority. The higher the priority, the more likely the print job is to cut in line ahead of other documents waiting to be printed.

Managing several documents

To pause, restart, or cancel several documents in the queue, select their icons. For example, click the first job you want to change. Then, hold down the Shift key and select the last one. Optionally, you can select (or deselect) icons by holding down the Ctrl key as you click. Then, right-click any selected item, or choose Document from the menu bar, and choose an action. The action will be applied to all selected icons.

Managing all documents

You can use commands on the print queue's Printer menu, shown in Figure 34.3, to manage all the documents in the queue without selecting any items first. The following options apply to all documents:

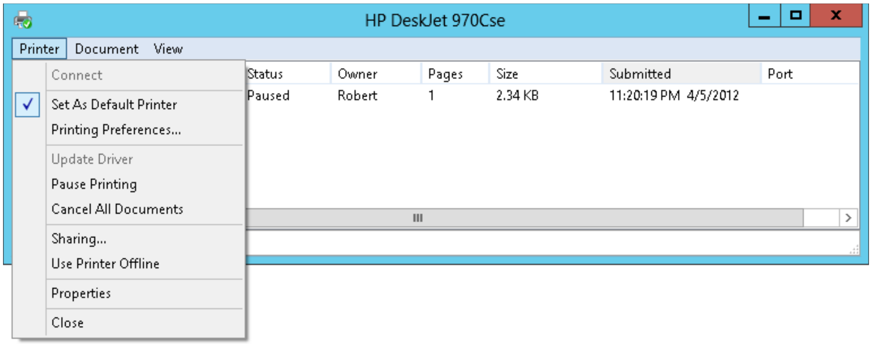
- **Pause Printing:** Pause the current print job and all those waiting in line. See the section "Printing Offline" later in this chapter for an example of when this would be useful.
- **Cancel All Documents:** You guessed it — this cancels the current print job and all those waiting to be printed.

How Do I Stop This Thing?

Don't expect a paused or canceled print job to stop right away. Several more pages may print, even after you've canceled a print job. That's because the print queue sends chunks of a document to the printer's buffer. That buffer, in turn, holds information waiting to be printed. Canceling a print job prevents any more data from being sent to the buffer, but the printer won't stop printing until its buffer is empty (unless, of course, you just turn the printer off).

FIGURE 34.3

Printer menu in the print queue


HP DeskJet 970Cse
Printer
Document
View
Connect
✓ Set As Default Printer
Printing Preferences...
Update Driver
Pause Printing
Cancel All Documents
Sharing...
Use Printer Offline
Properties
Close

Status	Owner	Pages	Size	Submitted	Port
Paused	Robert	1	2.34 KB	11:20:19 PM 4/5/2012	

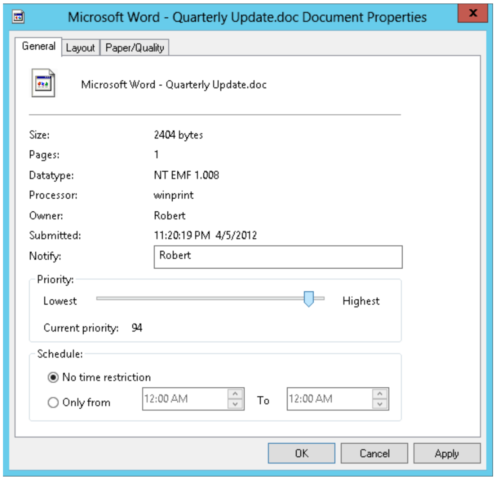
Changing print queue order

In the print queue, you can change the order in which documents in the queue will print. For example, if you need a printout right now, and there's a long line of documents waiting ahead of yours, you can give your document a higher priority so it prints sooner. In other words, your print job gets to cut in line ahead of others.

To change an item in the print queue's priority, right-click the item in the queue and choose Properties. On the General tab of the dialog box that opens, drag the Priority slider, shown in Figure 34.4, to the right. The farther you drag, the higher your document's priority. Click OK. Your document won't stop the document that's currently printing, but it may well be the next one to print.

FIGURE 34.4

Priority slider in a print queue item's Properties dialog box



Microsoft Word - Quarterly Update.doc Document Properties

Microsoft Word - Quarterly Update.doc

Size: 2404 bytes
Pages: 1
Datatype: NT EMF 1.008
Processor: winprint
Owner: Robert
Submitted: 11:20:19 PM 4/5/2012
Notify: Robert

Priority:
Current priority: 94

Schedule:
● No time restriction
○ Only from 12:00 AM To 12:00 AM

You can close the print queue as you would any other window — by clicking the Close button on the upper-right corner or by choosing Printer ➪ Close from the menu bar. To get help with the print queue while it's open, choose Help from the menu bar.

Solving Common Printer Problems

If you experience a problem printing a document, the problem could well be something to do with the printer. Before you assume the worst and delve into any major troubleshooting, check for some of the more common problems that cause such errors:

- Is the printer turned on and set online?
- Are both ends of the printer cable plugged in securely?
- Is there paper in the printer, and is it inserted properly?

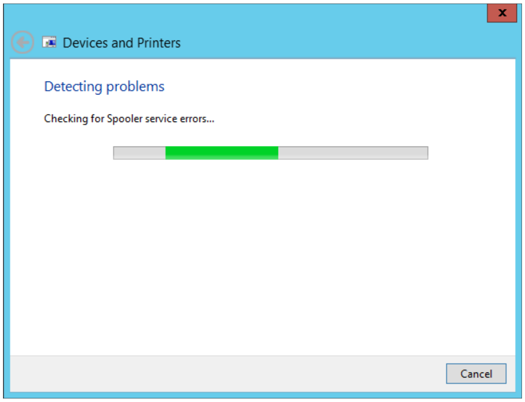
- Is there a paper jam in the printer?
- Does the printer still have ink or toner?

More often than not, you'll find that the printer problem is something as simple as the printer being out of paper or ink.

If there seem to be no issues with the printer itself, you can do some troubleshooting in Windows. Open the Devices and Printers folder, right-click the printer, and choose Troubleshoot, as shown in Figure 34.5. Windows 8 then runs through several troubleshooting steps to attempt to identify and fix the problem.

FIGURE 34.5

Troubleshoot a printer from Devices and Printers



Devices and Printers

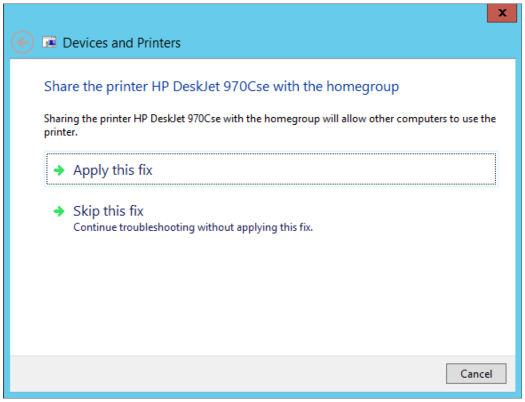
Detecting problems

Checking for Spooler service errors...

In some situations, Windows 8 will be able to identify the problem and fix it for you. In others, it will suggest a fix, as shown in Figure 34.6.

FIGURE 34.6

Suggested troubleshooting action



Devices and Printers

Share the printer HP DeskJet 970Cse with the homegroup

Sharing the printer HP DeskJet 970Cse with the homegroup will allow other computers to use the printer.

Apply this fix

Skip this fix
Continue troubleshooting without applying this fix.

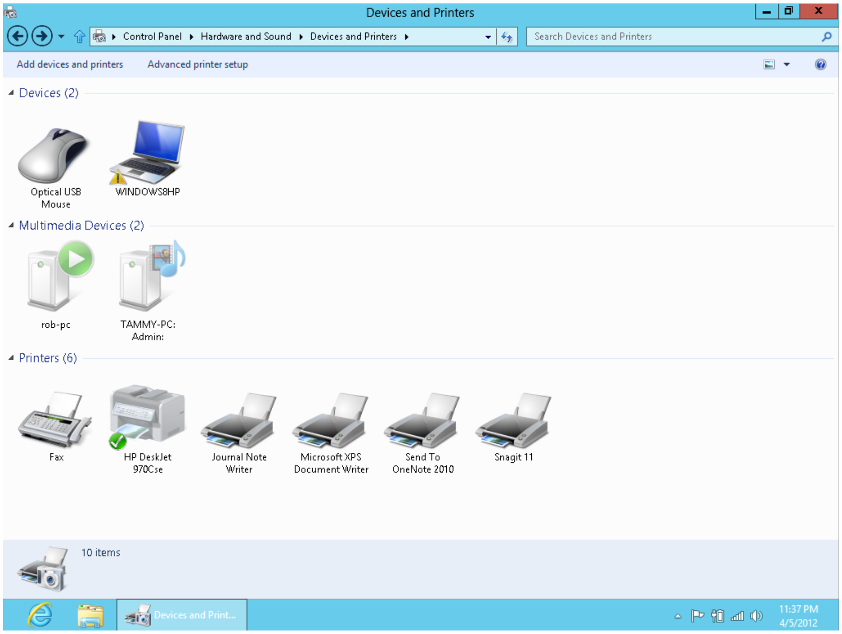
Printing Offline

Printing offline is a means of going through the process of creating the spool file for the printer without actually printing the document. There are times when this is useful, such as when you're working on a notebook computer with no printer attached but intend to print later when you can attach the computer to a printer or network.

To make this work, open the printer's queue and choose Use Printer Offline from the Printer menu, as shown in Figure 34.7. The printer's icon will dim and show the word *offline*. You can disconnect the printer from the computer.

FIGURE 34.7

Use Printer Offline


Devices and Printers
Control Panel ▸ Hardware and Sound ▸ Devices and Printers ▸
Search Devices and Printers
Add devices and printers
Advanced printer setup
Devices (2)
Optical USB Mouse
WINDOWS8HP
Multimedia Devices (2)
rob-pc
TAMMY-PC: Admin:
Printers (6)
Fax
HP DeskJet 970Cse
Journal Note Writer
Microsoft XPS Document Writer
Send To OneNote 2010
Snagit 11
10 items
Devices and Print...
11:37 PM
4/5/2012

You can print any document while the printer is offline. Of course, the document won't actually print because the printer isn't connected to the computer. When you get back to the printer, connect the printer to the computer again. Open the Printers folder, right-click the printer's icon, and choose Use Printer Online. Any documents you "printed" while disconnected from the printer will start printing.

CAUTION

XPS documents are a great way to share electronic printouts with people who don't have the same program you used to create the document.

Creating XPS Documents

As an alternative to printing on paper, you can print to an XPS document. The XPS document looks exactly like the printed document will look, but it is a file rather than a sheet of paper. You can then e-mail that XPS document to other people. Or, if you have a website, let people download it from your site.

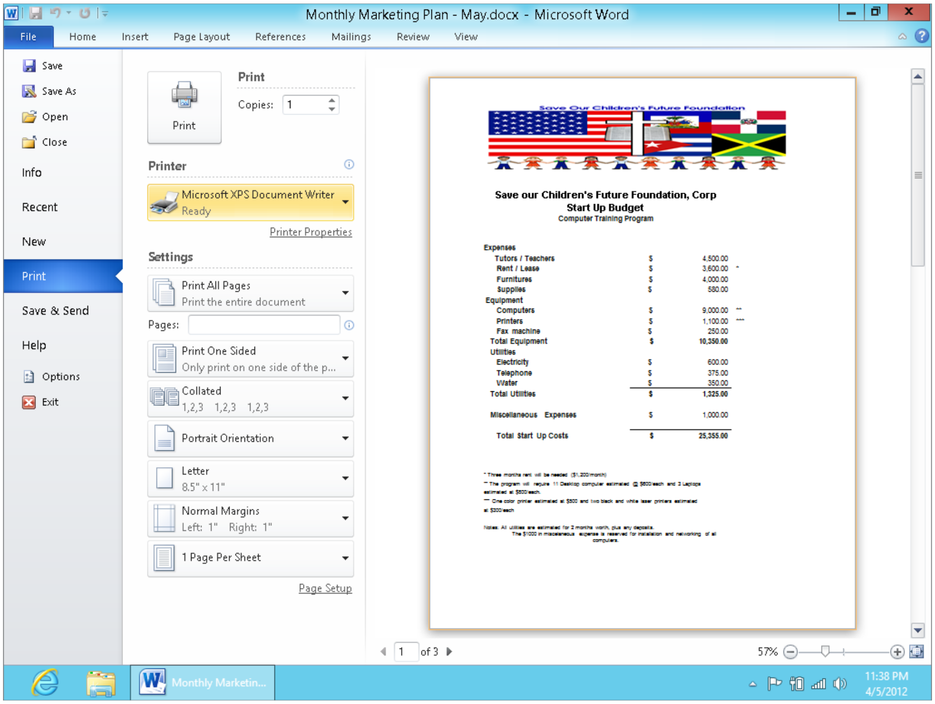
TIP

You can also use this technique to print other people's web pages to files on your own hard disk. You can view that file at any time; you don't need to be online.

To print to an XPS document, start printing as you normally would. For example, choose File ➪ Print from the program's menu bar. Or if you're in Internet Explorer, click the Print toolbar button. When the Print dialog box opens, choose Microsoft XPS Document Writer instead of your usual printer, as in Figure 34.8. Then click OK or Print.

FIGURE 34.8

Print to an XPS document


Monthly Marketing Plan - May.docx - Microsoft Word
File
Home
Insert
Page Layout
References
Mailings
Review
View
Save
Save As
Open
Close
Info
Recent
New
Print
Save & Send
Help
Options
Exit
Print
Print
Printer
Printer Properties
Settings
Page Setup
Save Our Children's Future Foundation
of 3
57%
Monthly Marketin...
11:38 PM
4/5/2012

Copies: 1

Microsoft XPS Document Writer
Ready

Print All Pages
Print the entire document

Pages:

Print One Sided
Only print on one side of the p...

Collated
1,2,3 1,2,3 1,2,3

Portrait Orientation

Letter
8.5" x 11"

Normal Margins
Left: 1" Right: 1"

1 Page Per Sheet

Save our Children's Future Foundation, Corp
Start Up Budget
Computer Training Program

Expenses			
Tutors / Teachers	$	4,500.00	
Rent / Lease	$	3,600.00	*
Furnitures	$	4,000.00	
Supplies	$	580.00	
Equipment			
Computers	$	9,000.00	**
Printers	$	1,100.00	***
Fax machine	$	250.00	
Total Equipment	$	10,350.00	
Utilities			
Electricity	$	600.00	
Telephone	$	375.00	
Water	$	350.00	
Total Utilities	$	1,325.00	
Miscellaneous Expenses	$	1,000.00	
Total Start Up Costs	$	25,355.00	

* Three months rent will be needed ($1,200/month)

** The program will require 11 Desktop computer estimated @ $600/each and 3 Laptops estimated at $800/each.

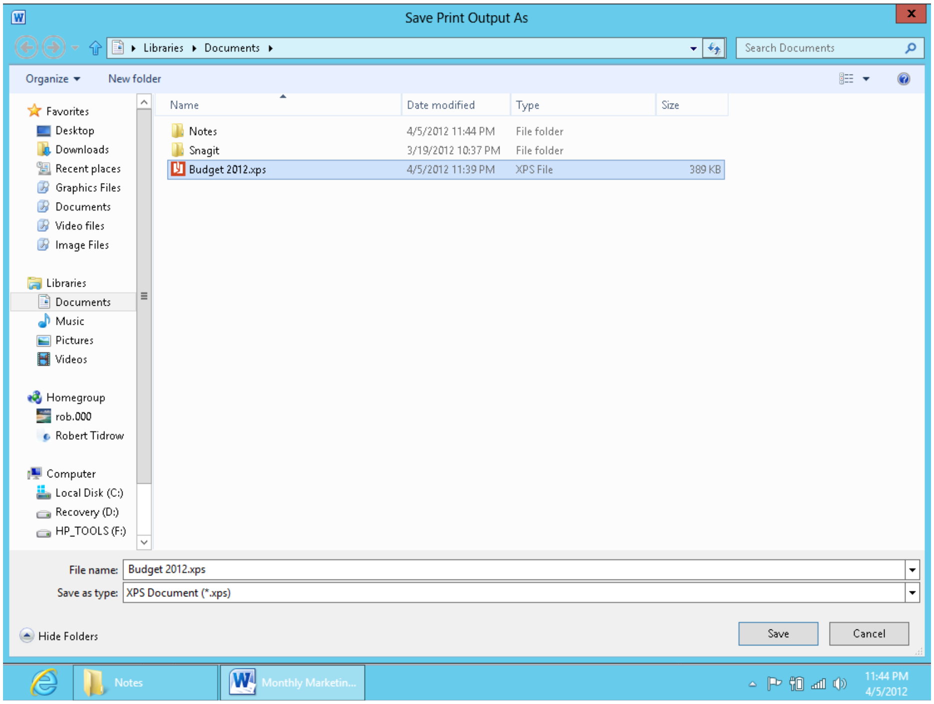
*** One color printer estimated at $500 and two black and white laser printers estimated at $300/each

Notes: All utilities are estimated for 2 months worth, plus any deposits.
The $1000 in miscellaneous expense is reserved for installation and networking of all computers.

Because you're printing to a file, a Save As dialog box will open. There you can choose the folder in which you want to place the file and give the file a name. Figure 34.9 shows a file named `Budget 2012.xps` located in the Documents folder about to be printed. Click Save.

FIGURE 34.9

Printing Budget 2012.xps in the Documents folder


Save Print Output As
Libraries ▸ Documents ▸
Search Documents
Organize ▾
New folder
Favorites
Desktop
Downloads
Recent places
Graphics Files
Documents
Video files
Image Files
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
Hide Folders
Save
Cancel
Notes
Monthly Marketin...
11:44 PM
4/5/2012

Name	Date modified	Type	Size
Notes	4/5/2012 11:44 PM	File folder	
Snagit	3/19/2012 10:37 PM	File folder	
Budget 2012.xps	4/5/2012 11:39 PM	XPS File	389 KB

File name: Budget 2012.xps
Save as type: XPS Document (*.xps)

The Save As dialog box closes. To verify that the document was printed to a file, open the folder you printed to. The file is closed so it will look like an icon (see Figure 34.10), but you can treat it as any other document. For example, double-click the icon to open it into the new Windows 8 Windows Reader app, as shown in Figure 34.11. Or, if you want to e-mail it to someone using an installed e-mail program, such as Windows Live Mail or Microsoft Outlook, right-click the icon and choose Send To ➪ Mail Recipient.

FIGURE 34.10

Icon for an XPS document

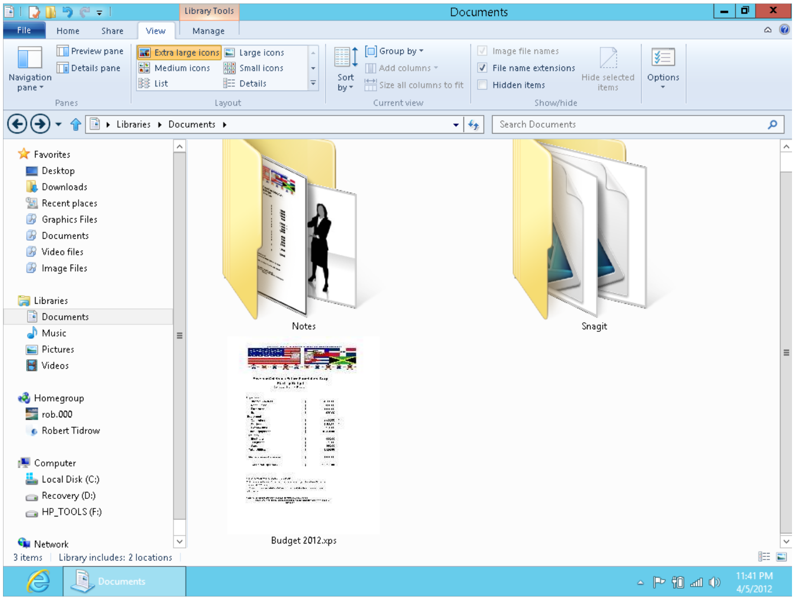
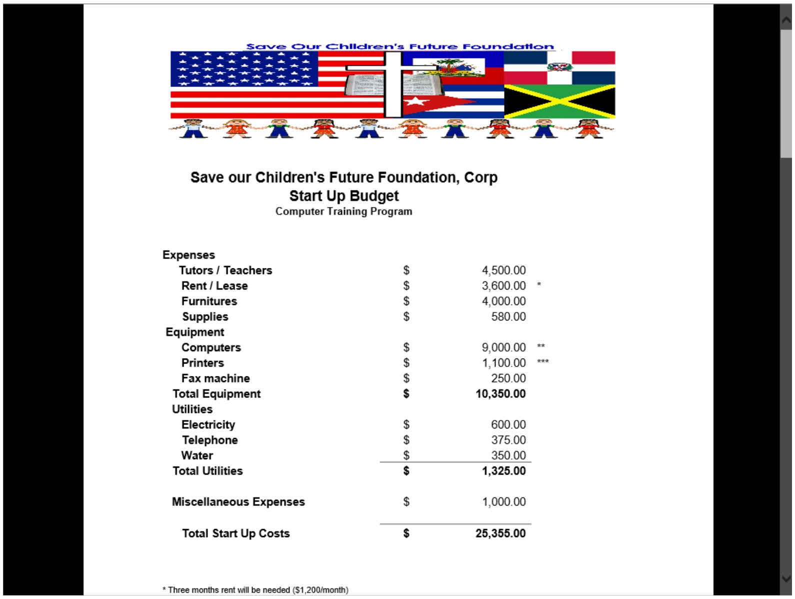

Library Tools
Documents
File
Home
Share
View
Manage
Preview pane
Details pane
Navigation pane
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Sort by
Group by
Add columns
Size all columns to fit
Image file names
File name extensions
Hidden items
Hide selected items
Options
Panes
Layout
Current view
Show/hide
Libraries ▸ Documents ▸
Search Documents
Favorites
Desktop
Downloads
Recent places
Graphics Files
Documents
Video files
Image Files
Libraries
Documents
Music
Pictures
Videos
Homegroup
rob.000
Robert Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (F:)
Network
Notes
Snagit
Budget 2012.xps
3 items
Library includes: 2 locations
Documents
11:41 PM
4/5/2012

FIGURE 34.11

Reading an XPS document in Windows Reader app


Save Our Children's Future Foundation

Save our Children's Future Foundation, Corp

Start Up Budget

Computer Training Program

Expenses			
Tutors / Teachers	$	4,500.00	
Rent / Lease	$	3,600.00	*
Furnitures	$	4,000.00	
Supplies	$	580.00	
Equipment			
Computers	$	9,000.00	**
Printers	$	1,100.00	***
Fax machine	$	250.00	
Total Equipment	**$**	**10,350.00**	
Utilities			
Electricity	$	600.00	
Telephone	$	375.00	
Water	$	350.00	
Total Utilities	**$**	**1,325.00**	
Miscellaneous Expenses	$	1,000.00	
Total Start Up Costs	**$**	**25,355.00**	

* Three months rent will be needed ($1,200/month)

Printing From Windows 8 Apps

Printing from Windows 8 apps is not as straight-forward as from standard (non-Windows 8) applications. Windows 8 apps do not have standard menu bars, or menu tabs from which to choose the print command. For Windows 8 apps, you use the Devices interface from the Charms bar to select a printer.

To print from a Windows 8 app, follow these steps:

1. Open a Windows 8 app, such as Maps.
2. Open the Charms bar.
3. Click Devices. A list of printers and other printer-related options displays, as shown in Figure 34.12. These other options vary depending on the devices and applications installed on your computer. For example, in Figure 34.12, the following four devices are found:
   - **HP DeskJet 970Cse:** An ink jet printer connected to my computer.
   - **Snagit 11:** A program that enables you to save an image file of the document or image that you are printing.
   - **Microsoft XPS Document Writer:** Enables you to save the document or image as an XPS file.
   - **Second Screen:** Projects the document or image on a second monitor connected to your computer.
4. For the example here, we want to choose to print to a printer so click the name of a printer installed on your computer. A screen similar to the one shown in Figure 34.13 appears. This screen varies depending on the printer options available.
5. To see more printing options, click More Settings. A screen similar to the one shown in Figure 34.14 appears. When finished setting these options, click the back arrow.
6. Click Print to print the document. As the document prints, the Devices screen is removed from the screen and you return to the Windows 8 app that you are printing from.

FIGURE 34.12

Displaying the Devices list when printing from a Windows 8 app

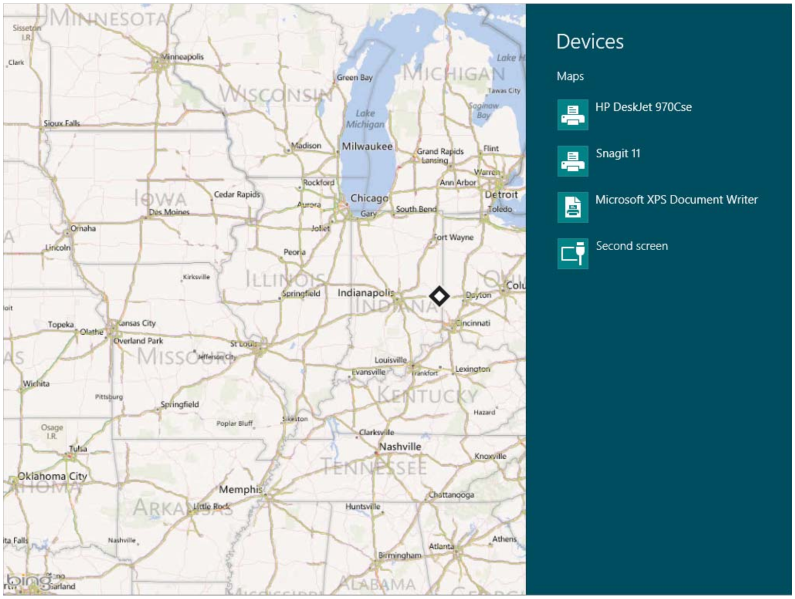
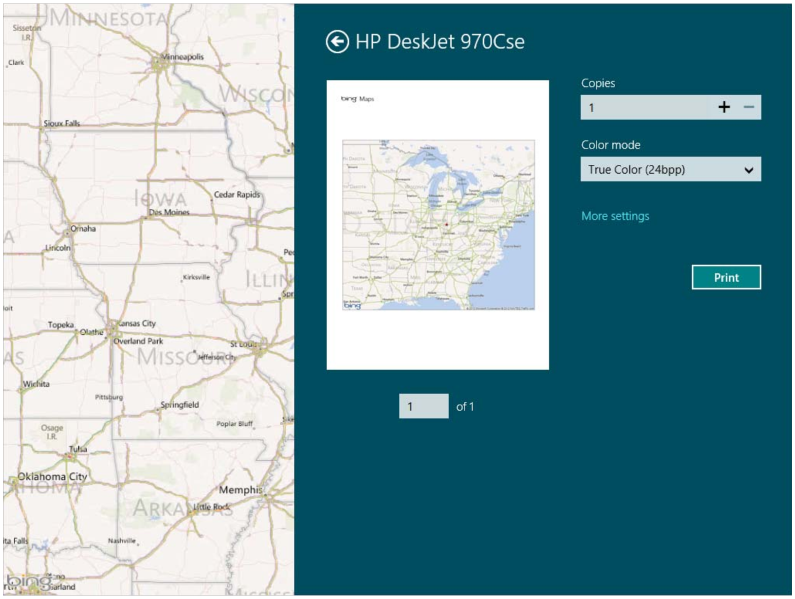

Devices
Maps
HP DeskJet 970Cse
Snagit 11
Microsoft XPS Document Writer
Second screen

FIGURE 34.13

Selecting options when printing to a printer


HP DeskJet 970Cse
More settings
Print

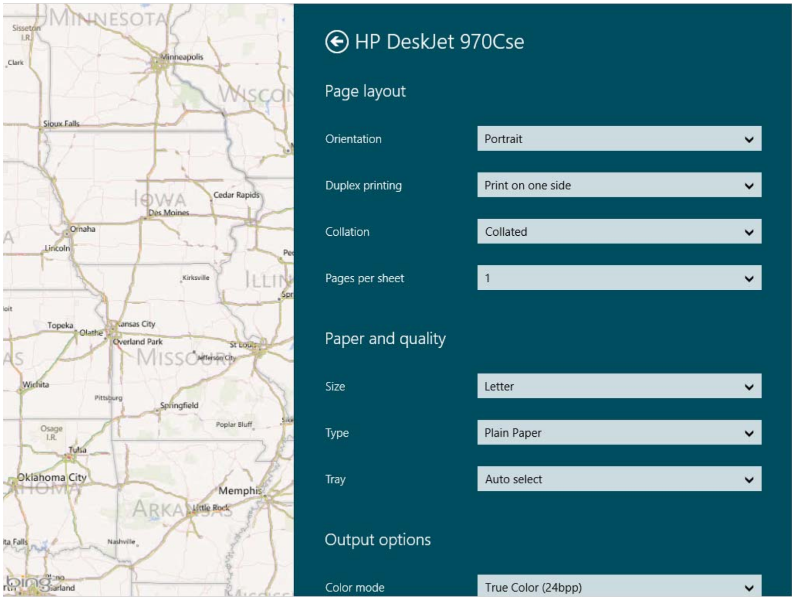
Copies: 1

Color mode: True Color (24bpp)

1 of 1

FIGURE 34.14

Selecting additional printer options


MINNESOTA
Sisseton I.R.
Clark
Minneapolis
WISCO
Sioux Falls
IOWA
Cedar Rapids
Des Moines
Omaha
Lincoln
Kirksville
ILLIN
Topeka
Kansas City
Olathe
Overland Park
St Louis
MISSOURI
Jefferson City
Wichita
Pittsburg
Springfield
Poplar Bluff
Osage I.R.
Tulsa
Oklahoma City
Memphis
ARKANSAS
Little Rock
Nashville
bing

HP DeskJet 970Cse

Page layout

Orientation	Portrait
Duplex printing	Print on one side
Collation	Collated
Pages per sheet	1

Paper and quality

Size	Letter
Type	Plain Paper
Tray	Auto select

Output options

Color mode	True Color (24bpp)

Wrap-Up

The typical printing scenario is that you choose File ➪ Print from a program's menu bar, or press Ctrl+P, to print whatever document you're viewing at the moment. But as you've seen in this chapter, there's more going on behind the scenes, and there are things you can do to manage your print jobs.

- Every document you print is a print job, temporarily stored in a print queue.
- To open the print queue, double-click the printer icon in the Notification area, or the printer's icon in the Printers folder.
- To manage print jobs in the queue, right-click any job and choose an option from the shortcut menu.
- To cancel all documents that are waiting to be printed, choose Printer ➪ Cancel All Documents from the print queue's menu bar.
- To print to an XPS document rather than paper, start printing and get to the Print dialog box as you normally would but choose Microsoft XPS Document Writer as the printer.
- To read an XPS document, open it in the new Windows Reader app.
- To print from a Windows 8 app, choose the Devices item from the Charms bar, then select the printer to print to.

CHAPTER
35

Faxing and Scanning

IN THIS CHAPTER

- Using Windows Fax and Scan
- Setting up a fax account
- Sending and receiving faxes
- Scanning documents

Fax machines have been around for a long time, and it's a safe bet that you have at least a basic understanding of how faxing works, at least in the context of paper faxes. Essentially, you scan a document, and the fax machine sends it to a recipient's fax machine, which then prints the fax.

There isn't as much reason to use faxes in today's world. If the item you want to send someone is a file, it's much easier to send an e-mail message to the recipient with a copy of the file attached. It doesn't matter what program you use for e-mail. They all allow you to attach files to messages.

On the other hand, if the person to whom you're sending a file doesn't have an e-mail account or can't accept attachments by e-mail, then fax might be your best alternative. You have the added benefit in Windows 8 of faxing right from your applications, with no need to print the document and scan it through a fax machine.

TIP

Although faxing and scanning are nothing new, Windows Fax and Scan provides easier ways to use fax equipment and scanners.

What You Need for Fax

To use Fax, your computer must have either a fax modem card that's connected to an analog phone line or access to a fax server on the same local network. A fax server is a program on a computer that has a fax modem installed and allows other computers in the network to send and receive faxes through that device. To use a fax server, you need to know the name of that server. If you didn't set up the fax server, ask the person who did for that name.

NOTE
If you have a multi-function printer that includes fax capabilities, you'll likely use the printer, not Windows or your computer, to send and receive faxes. See the manual that came with your printer for instructions. The information presented in this chapter may not apply.

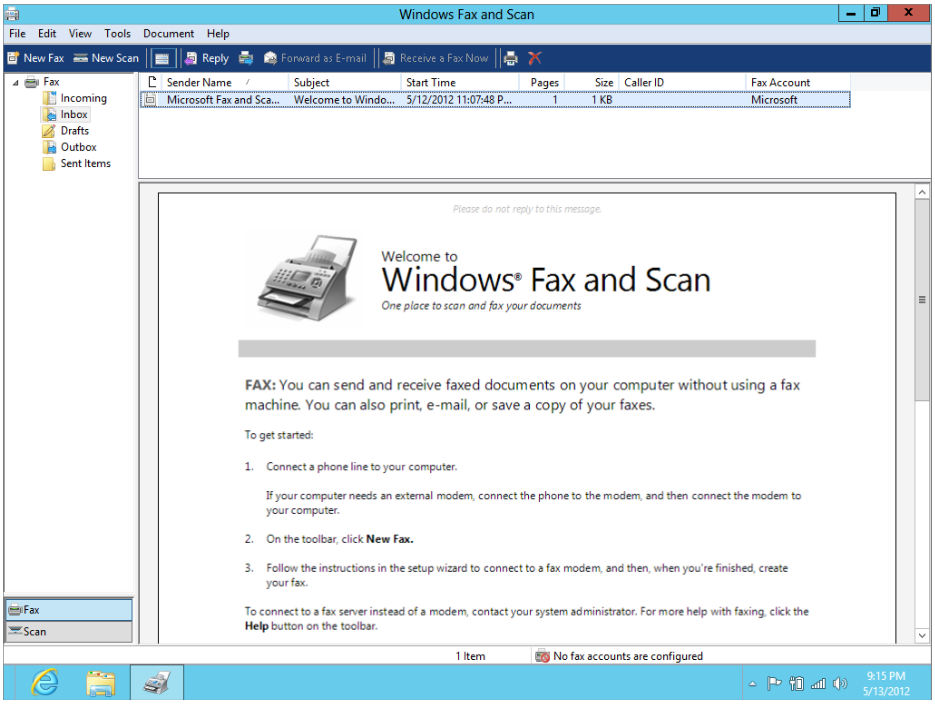
Opening Windows Fax and Scan

Windows Fax and Scan is the program that comes with Windows 8 for faxing and scanning. To open that program, display the Charms bar, click Search, and type **fax**. Or, if you are at the Start screen, type **fax**. Click Windows Fax and Scan.

Figure 35.1 shows how the program looks when you first open it.

FIGURE 35.1

Windows Fax and Scan


Windows Fax and Scan
File
Edit
View
Tools
Document
Help
New Fax
New Scan
Reply
Forward as E-mail
Receive a Fax Now
Fax
Incoming
Inbox
Drafts
Outbox
Sent Items
Fax
Scan
1 Item
No fax accounts are configured
9:15 PM
5/13/2012

Sender Name	Subject	Start Time	Pages	Size	Caller ID	Fax Account
Microsoft Fax and Sca...	Welcome to Windo...	5/12/2012 11:07:48 P...	1	1 KB		Microsoft

Please do not reply to this message.

Welcome to
Windows® Fax and Scan
One place to scan and fax your documents

FAX: You can send and receive faxed documents on your computer without using a fax machine. You can also print, e-mail, or save a copy of your faxes.

To get started:

1. Connect a phone line to your computer.

   If your computer needs an external modem, connect the phone to the modem, and then connect the modem to your computer.

2. On the toolbar, click **New Fax.**
3. Follow the instructions in the setup wizard to connect to a fax modem, and then, when you're finished, create your fax.

To connect to a fax server instead of a modem, contact your system administrator. For more help with faxing, click the **Help** button on the toolbar.

Creating a fax account

To send and receive faxes from your computer, you need a fax account. You need to set up the account only once, not each time you want to send and receive faxes. To create a fax account, open Windows Fax and Scan as described in the previous section. Make sure that you're viewing faxes rather than scans (click Fax in the left column if you're unsure). Then follow these steps:

1. In the menu bar, click Tools ➪ Fax Accounts.
2. Click Add to create a new account.
3. On the first page that opens, click the type of account you want to set up, either for a fax modem in your own computer or a fax server on your local network.
4. Follow the onscreen instructions for the type of account you're creating.

NOTE

If you're trying to connect to a fax server but don't know its name, ask your network administrator or the person who installed the fax server. Guessing won't work.

When you're finished, the Fax Accounts dialog box shows the name of the fax account you created. Before you send or receive faxes, you'll want to configure the account to best suit your needs. See the next section if you're using a fax modem. See the section after next if you're using a fax server.

Configuring fax modem options

If you'll be using a fax modem in your own computer to send and receive faxes, you need to make some decisions about how you want to use it. The options available to you are in the Fax Settings dialog box. In Windows Fax and Scan, first make sure that you're in the Fax view (click Fax in the left column if you're not sure). Then follow these steps:

1. Choose Tools ➪ Fax Settings.
2. If you want to send faxes from the fax modem, select (check) the first option, Allow The Device To Send Faxes.
3. If you want the fax modem to receive faxes, select Allow The Device To Receive Fax Calls on the General tab. Then choose one of the following options:
   - **Manually Answer:** Choose this option if you want to manually answer incoming calls by clicking the Answer Now button in Fax Monitor as described in the section "Receiving Faxes" later in this chapter.
   - **Automatically Answer After X Rings:** Choose this option if you want the fax modem to answer automatically. Then specify a ring delay (the number of times the phone must ring before the fax modem answers).
4. To configure fax alerts and how Fax Monitor operates, click the Tracking tab. You see the options in Figure 35.2.

5. Select or clear any options on the Tracking tab according to your personal preferences. If you don't have any preferences yet, select them all, as you see in the figure.
6. Optionally, click the Advanced tab to configure options shown in Figure 35.3.
7. To grant faxing permissions to standard users, click the Security tab. Click the Everyone group and then use check boxes to allow permissions as you see fit.
8. Click OK.

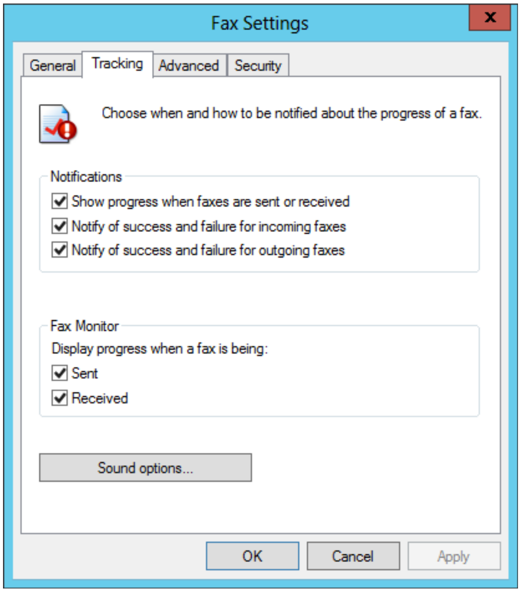
Sharing Fax with a Voice Line

Faxing is easiest when you have a dedicated phone line for faxes. If the fax modem uses the same phone number as your voice phone, your best bet will be to choose Manually Answer. That way, if you hear the high-pitched tone of an incoming fax when you answer the phone, you can click the Receive Now button in Fax Monitor to accept the incoming fax.

Also, if you have an answering machine or service that automatically answers after X rings, you don't want Fax Monitor beating it to the punch every time. Otherwise, nobody will be able to leave you a voice message!

FIGURE 35.2

Fax modem tracking options



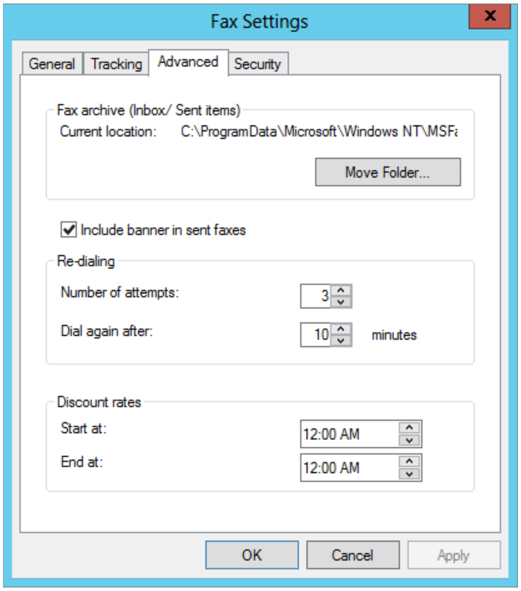
Choose when and how to be notified about the progress of a fax.

Notifications
☑ Show progress when faxes are sent or received
☑ Notify of success and failure for incoming faxes
☑ Notify of success and failure for outgoing faxes

Fax Monitor
Display progress when a fax is being:
☑ Sent
☑ Received

FIGURE 35.3

Advanced fax modem options



Fax archive (Inbox/ Sent items)
Current location: C:\ProgramData\Microsoft\Windows NT\MSFa
☑ Include banner in sent faxes
Re-dialing
Number of attempts: 3
Dial again after: 10 minutes
Discount rates
Start at: 12:00 AM
End at: 12:00 AM

If you send and receive faxes through a fax server, there is no need to configure options for receiving faxes. Any faxes you receive will automatically be sent to your Inbox.

Defining Dialing Rules

If this will be the first time you're using your modem, you may need to take a moment to configure your dialing rules. For example, most locations in the United States require dialing a 1 before you dial a number outside your own area code. When dialing within your own area code, you might need to dial only seven digits. Or, if your area uses ten-digit dialing, you have to dial your area code plus the seven-digit phone number.

To configure dialing rules, open the Phone and Modem applet from the Control Panel (type **phone** while at the Start screen or display the Charms bar, click Search, type **phone**, and then click Settings). If this is the first time opening Phone and Modem, Windows 8 displays the Location Information dialog box in which you enter your local area code and a couple of other self-explanatory options. Then, the Phone and Modem dialog box opens.

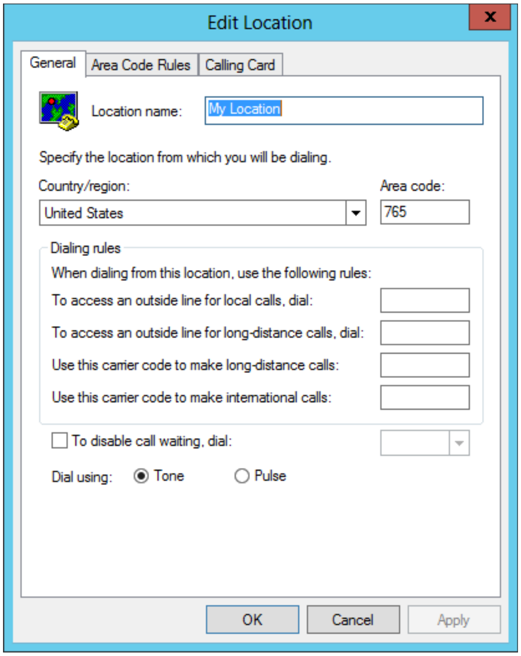
If you're using a modem with a desktop computer, you can set up one set of dialing rules for your location. If you use the modem in a portable computer and travel around, you can set up dialing rules for multiple locations.

The default location (the main location from which you dial) is referred to as My Location by default. Chances are you'll see that location in the Phone and Modem dialog box as soon as the dialog box opens. If not, click the New button to create it. Use the New button to set up dialing rules for multiple locations, too.

To create or change dialing rules for any location listed in the Phone and Modem dialog box, click the location name and then click the Edit button. The first set of options, shown in Figure 35.4, is self-explanatory.

FIGURE 35.4

Edit Location dialog box



Location name: My Location

Specify the location from which you will be dialing.

Country/region: United States

Area code: 765

Dialing rules

When dialing from this location, use the following rules:

To access an outside line for local calls, dial:

To access an outside line for long-distance calls, dial:

Use this carrier code to make long-distance calls:

Use this carrier code to make international calls:

☐ To disable call waiting, dial:

Dial using: ● Tone ○ Pulse

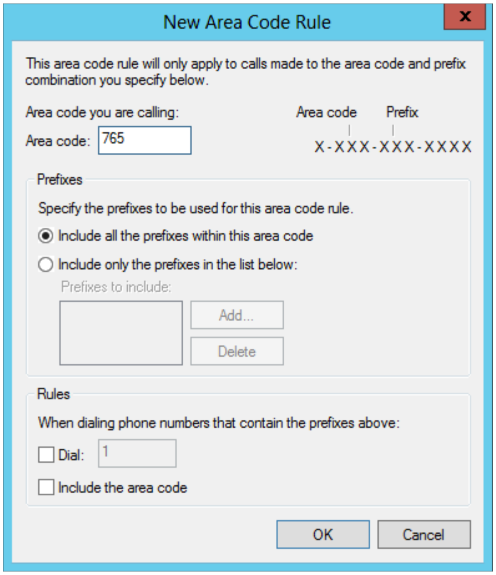
Keep in mind that all the options refer to where you're dialing *from*, not to, so you want to choose the country and specify the area code you're in when using the modem. If you need to dial a number for an outside line, choose the appropriate options and specify the number you dial.

Call waiting can interfere with modems. So if there's a way to turn that off, choose the Disable Call Waiting option and specify the number you dial to disable that. Leave the Tone option selected unless you're in an area that still uses the old rotary phones rather than buttons.

To create a rule for dialing area codes, click the Area Code Rules tab. Then click New to get to the options shown in Figure 35.5. The instructions on the tab explain how to define a rule. Remember that these rules apply to phone numbers you dial. For example, if you need to include the area code (but not a 1 prefix) when dialing within the 215 area code, enter that area code up top and select Include The Area Code near the bottom of the dialog box, as in the figure. Then click OK.

FIGURE 35.5

Defining an area code rule


New Area Code Rule

This area code rule will only apply to calls made to the area code and prefix combination you specify below.

Area code you are calling:

Area code: 765

Area code Prefix

X-XXX-XXX-XXXX

Prefixes

Specify the prefixes to be used for this area code rule.

● Include all the prefixes within this area code

○ Include only the prefixes in the list below:

Prefixes to include:

Rules

When dialing phone numbers that contain the prefixes above:

☐ Dial: 1

☐ Include the area code

If you need to define a rule for an area code and prefix combination (which is rare), you can specify the area code in the top box and then specify one or more prefixes under the Prefixes heading.

If you want all your phone charges to be put on a calling card, click the Calling Card tab. Choose the calling card company you use and click New. Then fill in the blanks to ensure that the calls are billed to your account. Click OK in all open dialog boxes after defining rules and accounts.

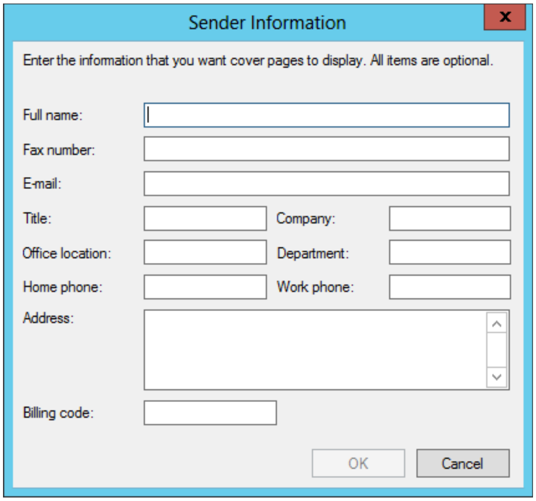
If you later discover that you're having a problem reaching a certain phone number, open the Phone and Modem Options dialog box again and choose the location from which you're dialing. Then click the Edit button to fix any rules or account information that might be causing incorrect dialing.

Setting Up Your Cover Sheets

It's generally a good idea to send cover sheets with faxes. You can define some general information to appear on cover sheets in advance so you don't have to re-type that information every time you send a fax. If you've closed the Windows Fax and Scan program, re-open it using the method described earlier in this chapter. Then choose Tools ➪ Sender Information from the menu bar. You'll see the dialog box shown in Figure 35.6.

FIGURE 35.6

Defining sender information



Enter the information that you want cover pages to display. All items are optional.

Sender Information
Full name:
Fax number:
E-mail:
Title:
Company:
Office location:
Department:
Home phone:
Work phone:
Address:
Billing code:
OK
Cancel

Fill in only as much information as you want to appear on each fax cover sheet. Then click OK.

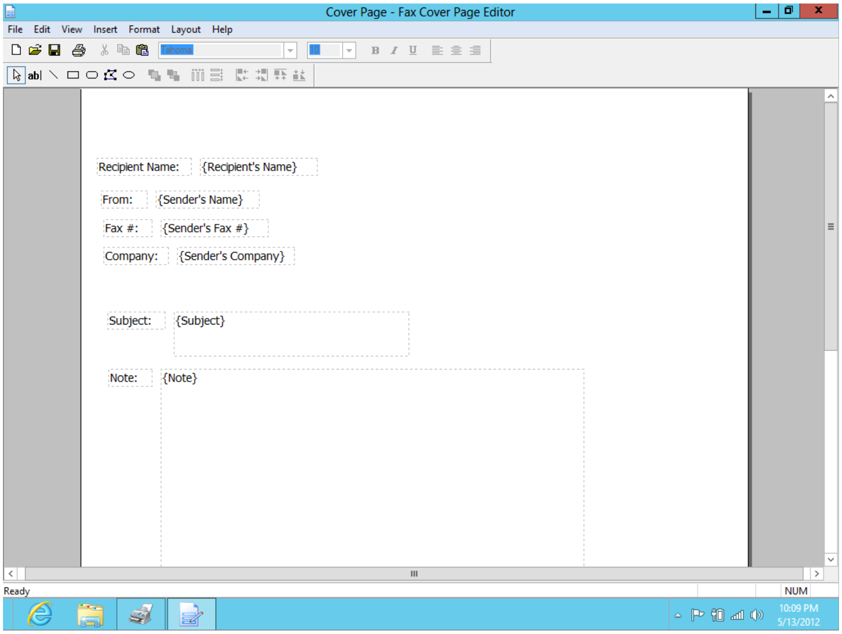
TIP

Windows Fax and Scan offers a small selection of predefined cover pages, but you can also create your own.

Next, consider using the Fax Cover Page Editor to create a professional-looking fax cover sheet. To open the Fax Cover Page Editor, in Windows Scan and Fax, click Tools ➪ Cover Pages. The Fax Cover Pages dialog box opens. Then, click New. Figure 35.7 shows the Fax Cover Page Editor program window with a few fields added to the cover page.

FIGURE 35.7

Fax Cover Page Editor



Recipient Name: {Recipient's Name}

From: {Sender's Name}

Fax #: {Sender's Fax #}

Company: {Sender's Company}

Subject: {Subject}

Note: {Note}

To insert fields into your cover page, click Insert; then click Recipient, Sender, or Message, followed by the item you want to insert. The item then appears in the cover page and you can drag it into position and/or resize it as needed. Repeat the process to add to the cover page all of the fields you want. To align fields with one another, hold the Ctrl key and select the items you want to align; then click Layout and use the options in the Align Objects, Space Evenly, and Center On Page menus to lay out the fields on the page.

You can use the drawing tools in the Drawing toolbar to draw lines, squares, rounded boxes, polygons, circles, and ellipses, and also add text boxes to the page. The program is fairly simple to use, so we won't go into a lot of detail here. With several minutes of experimenting, you should be able to lay out a nice-looking cover page.

When you're ready to save the cover page so you can use it for your faxes, click File ➪ Save. In the Save As dialog box, enter a name for the cover page and click Save.

TIP

Fax Cover Page Editor uses the folder `My Documents\Fax\Personal CoverPages` by default, but you can choose any folder you like.

With your cover pages created, you're all set to start sending faxes. The next section explains how.

Sending Faxes

You can send faxes to people in two ways: right from the Windows Fax and Scan program, or from the program you used to create the document you want to scan. The end result is the same either way. Just use whichever method is easiest for you.

Faxing from Windows Fax and Scan

To create and send a fax from the Windows Fax and Scan program, open that program as described earlier in this chapter. Click Fax in the left column to ensure you're in the faxing mode. Then follow these steps:

1. Click the New Fax toolbar button and choose File ➪ New ➪ Fax from the menu.
2. If you want to include a cover sheet, click Cover Page and choose the style you want.

TIP

To create and manage your own fax cover sheets, choose Tools ➪ Cover Pages from the Windows Fax and Scan menu bar.

3. To specify recipients, do any of the following:
   - Type the recipient's fax number directly into the box to the right of the To: button.
   - If the recipients are already in your Contacts, click the To: button, select a recipient, and then click the To: button to add each recipient's name to the Message Recipient's list and Click OK when finished adding recipients.
   - To add recipients to your Contacts, click the To: button, click New Contact, and fill in the recipient's name and fax number (plus any other information you have). Click OK and then click To: to add the recipient to the Message Recipients list. Click OK.

CAUTION

If a recipient's name is red in the To: box, that means there is no fax number for that recipient. Edit the recipient's Contact information to include a fax number.

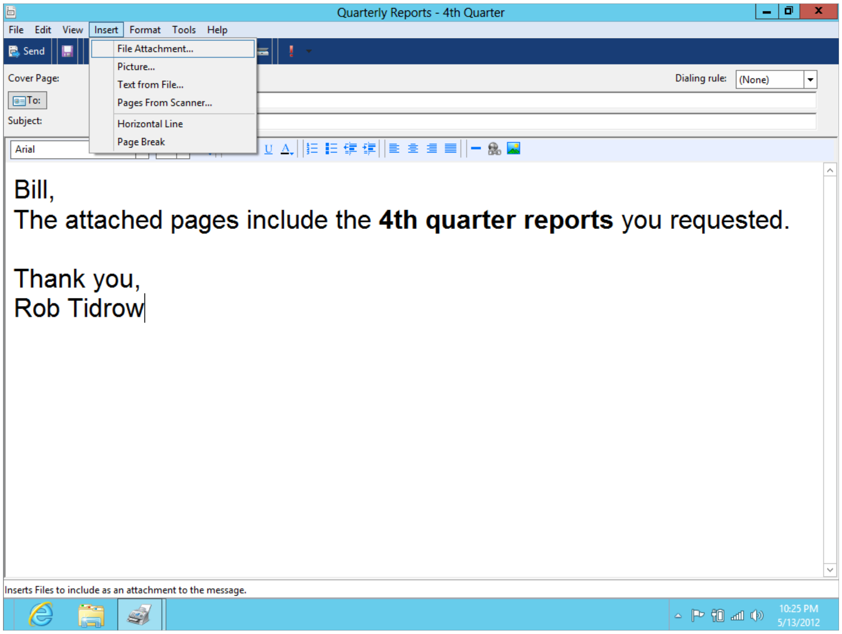
4. Fill in the Subject line with a brief description of the fax. If you send the fax to another computer, the Subject text will appear in the fax header, like the Subject line in an e-mail message.
5. Type the body of your fax in the main program window. You can use standard text selection techniques and options in the toolbar to format the text.
6. Optionally, to insert a picture or file to send with your fax, click Insert on the menu bar to see the options shown in Figure 35.8. Then choose whichever option best describes what you want to insert:

- **File Attachment:** Choose this option to attach any printable document to your fax. The file you choose will be converted to a TIF image and sent as part of the fax.
- **Picture:** Choose this option to insert a picture into the body of your fax message. When the picture is in the message, you can size it using the dragging handles. To wrap text around a small picture, right-click the picture and choose Properties; then set the Alignment property to Left or Right.
- **Text From File:** Choose this option to add text from any `.txt`, `.htm`, or `.html` file to your message. You can edit the inserted text using the same techniques used to edit text you typed yourself.
- **Pages From Scanner:** If you have one or more pages in your scanner to send, choose this option to scan the printed page(s) and add them immediately.
- **Horizontal Line:** Insert a horizontal separator line in the fax from margin to margin.
- **Page Break:** Start a new page in the fax.

7. Optionally, to preview how your fax will look to the recipient, choose View ➪ Preview from the menu. Close the preview window when done.
8. Finally, to send the fax immediately, click Send. To schedule when the fax is sent, choose Tools ➪ Options to see the options shown in Figure 35.9. Choose to send the fax when discount rates apply, or at a specific time of day. Then click OK.

FIGURE 35.8

Insert options


Quarterly Reports - 4th Quarter
File
Edit
View
Insert
Format
Tools
Help
Send
File Attachment...
Picture...
Text from File...
Pages From Scanner...
Horizontal Line
Page Break
Cover Page:
To:
Subject:
Dialing rule:
(None)
Arial
Inserts Files to include as an attachment to the message.
10:25 PM
5/13/2012

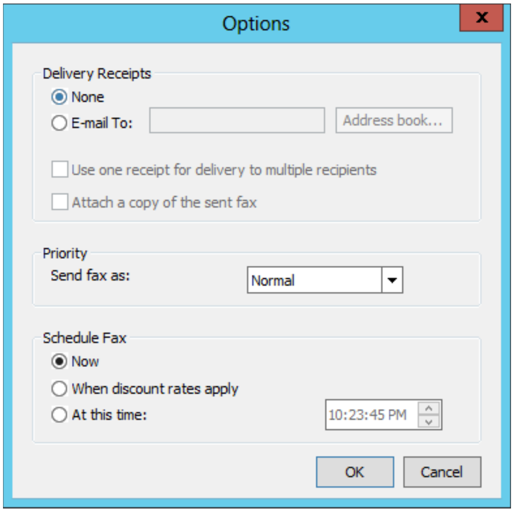
Bill,
The attached pages include the **4th quarter reports** you requested.

Thank you,
Rob Tidrow

35

FIGURE 35.9

Sending options



Delivery Receipts
● None
○ E-mail To:
☐ Use one receipt for delivery to multiple recipients
☐ Attach a copy of the sent fax

Priority
Send fax as: Normal

Schedule Fax
● Now
○ When discount rates apply
○ At this time: 10:23:45 PM

The fax message will go to the Outbox until it is sent to the recipient. Once the fax is sent, a copy of it is added to your Sent Items folder.

Sending faxes from programs

As an alternative to going through Fax and Scan, you can often fax a file using the same procedure you use to print. Open the document you want to fax using whatever program you typically use for that type of document. For example, open a document in Word, or a web page in Internet Explorer.

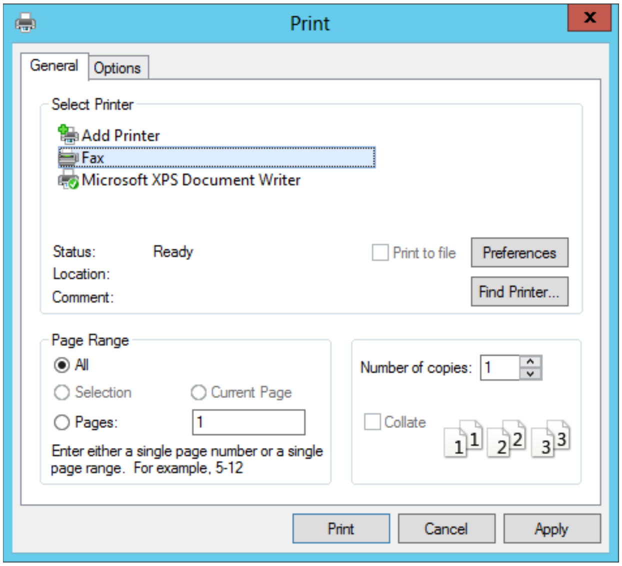
CAUTION

When you fax a document, you send the recipient a non-editable image of the document. If you want to send an editable copy of the document, you should attach it to an e-mail message.

Next, choose File ➪ Print from the program's menu bar as though you were going to print the document yourself. When the Print dialog box opens, choose Fax from the list of available printers, as in Figure 35.10. Then click OK.

FIGURE 35.10

Choose Fax as the printer


Print
General
Options
Select Printer
Add Printer
Fax
Microsoft XPS Document Writer
Print to file
Preferences
Find Printer...
Page Range
All
Selection
Current Page
Pages:
Collate
Print
Cancel
Apply

Status: Ready

Location:

Comment:

● All

Pages: 1

Enter either a single page number or a single page range. For example, 5-12

Number of copies: 1

☐ Print to file

☐ Collate

A copy of the document is converted to a TIFF picture and attached to a fax message in the New Fax window. Use the steps described in the previous section to choose a recipient, enter a Subject line, add a cover page, and set other options. When you're ready to send the fax, click Send.

If your fax is sent to a standard fax machine, the recipient sees the document printed on paper only. If the recipient is using software such as Windows Fax and Scan, the document will be a TIFF image in the recipient's Inbox.

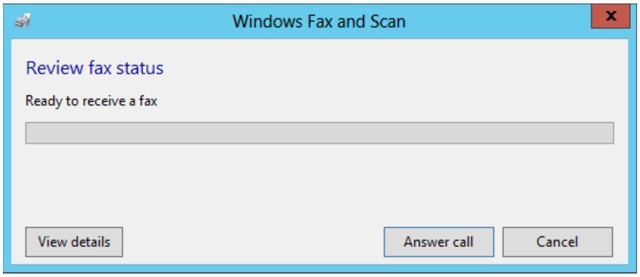
Receiving Faxes

If you've configured Windows Fax and Scan to receive faxes, you can receive incoming faxes in your Inbox. You might want to keep the Fax Monitor open at all times to make it easier to detect incoming faxes. This is especially important if you did not configure Fax and Scan to answer all calls automatically. To open Fax Monitor:

1. Open Windows Fax and Scan using the technique described near the start of this chapter.
2. Choose Tools ➪ Fax Status Monitor from the menu bar. The monitor opens, as shown in Figure 35.11.
3. Optionally, close Windows Fax and Scan, leaving only the monitor on the screen.

FIGURE 35.11

Fax monitor



Windows Fax and Scan

Review fax status

Ready to receive a fax

When the phone rings, you can pick up the handset on your phone to see who is calling. If you hear the high-pitched sound of an incoming fax, click Answer Call to accept the fax and add it to your Windows Fax and Scan Inbox.

TIP

Here's another way to get to your fax Inbox: Open File Explorer to the Documents folder. In the Navigation pane, click the Fax subfolder.

If you use a fax server rather than a fax modem in your own computer, you don't need to do anything to receive a fax. The fax server adds the fax to your Inbox automatically. Just check your Inbox occasionally to see what's available.

Working with Faxes

Windows Fax and Scan handles faxes in much the same way Windows 8 Mail handles e-mail. New faxes you receive are placed in your Inbox. To see all the faxes in your Inbox:

1. Open Windows Fax and Scan using any method described near the start of this chapter.
2. In the left column, click Inbox under the Fax heading.

The top half of the main pane shows a header for each received fax. The header includes the sender's name, subject, time, pages, and other useful information. Click any header to see the contents of the fax message in the lower pane. Double-click any header to open the fax in a separate larger window. The rest is easy.

To reply to the fax, click the Reply toolbar button.

- To forward the fax to another fax recipient, click Forward As Fax in the toolbar.
- To forward the fax as an e-mail message, click Forward As E-mail.
- To close the fax, click the Close (X) button.

You can also work directly with fax headers in the top pane of your Inbox. For example:

- To print a fax, right-click its header and choose Print.
- To delete a fax, click its header and click the Delete (red X) toolbar button, or right-click the header and choose Delete.

For more information on faxing with Windows 8 and basic troubleshooting techniques, search Windows 8's help for `fax`.

Scanning Documents

A scanner is a device similar to a copy machine. You put a piece of paper in the scanner according to the instructions that came with your scanner. Then you scan the document. But unlike a copier, a scanner doesn't give a copy of the document on paper. Instead it stores a copy of the printed document as a file in your computer.

You use a scanner to get copies of things that exist only on paper into your computer. The scanned image is like a photocopy of the original. This means that even if the scanned document contains words, you won't be able to edit it in a word processing program such as WordPad or Microsoft Word.

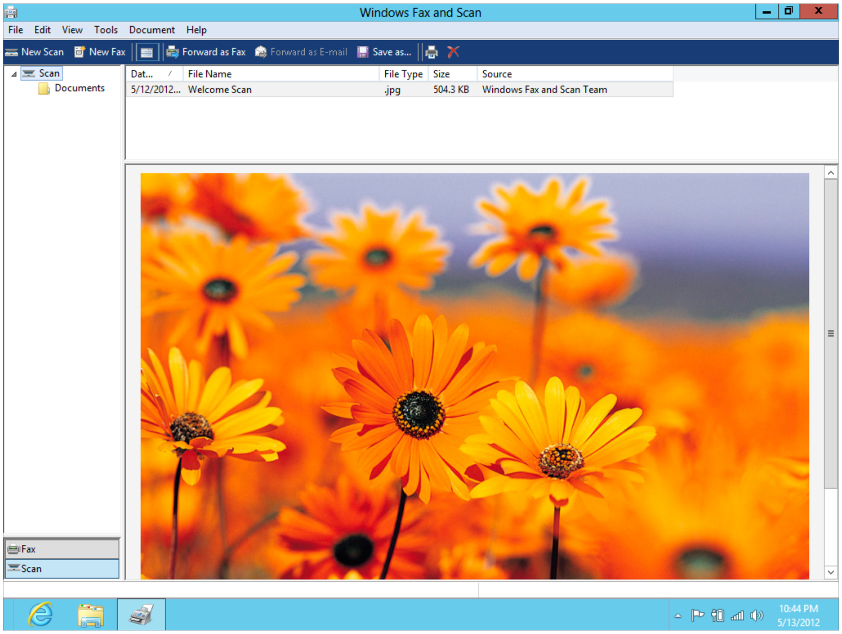
If you want to edit a scanned document, you first need to use OCR (Optical Character Recognition) software to convert the scanned document to an editable form. Windows 8 doesn't come with OCR software built in. However, many programs that work with Windows do have built-in OCR capabilities. Chances are that when you bought your scanner, you got OCR software with it. To find out, check the documentation that came with your scanner.

Scanning with Windows Fax and Scan

To scan a document using Windows Fax and Scan, first open that program as described earlier in this chapter. At the bottom of the left pane, click Scan. Clicking Documents in the left pane lists all documents you've scanned with that program. If you haven't scanned yet, the list will be empty except for a sample scan, as in Figure 35.12.

FIGURE 35.12

Windows Fax and Scan in scan mode


Windows Fax and Scan
File
Edit
View
Tools
Document
Help
New Scan
New Fax
Forward as Fax
Forward as E-mail
Save as...
Scan
Documents
Fax
Scan
10:44 PM
5/13/2012

Dat...	File Name	File Type	Size	Source
5/12/2012...	Welcome Scan	.jpg	504.3 KB	Windows Fax and Scan Team

To scan a document, load it into your scanner according to the scanner manufacturer's instructions. For example, if it's a flatbed scanner, place the document face down on the glass and close the cover. If it's the kind of scanner where you load pages into a document feeder, load them accordingly. Then follow these steps:

1. In Windows Fax and Scan, click New Scan in the toolbar or choose File ➪ New ➪ Scan from the menu bar.
2. In the New Scan dialog box, you can choose a scan profile if you created one earlier.
3. Optionally, click the Preview button to see how the scanned image will look.
4. Optionally, use sizing handles in the preview area to crop out the portion of the document you want to scan.
5. If there's anything you don't like about the preview image, use any combination of the following options to make adjustments:
    - **Source:** If your scanner offers multiple paper sources, choose the one that contains the document you're about to scan.
    - **Paper Size:** If you're using a non-standard paper size with an automatic document feeder, use this option to specify that size.
    - **Color Format:** Choose Color, Grayscale, or Black & White according to your preferences.

TIP

Use Black & White for text documents and forms that contain no shades of gray. Use Grayscale for photos and documents that do contain some shades of gray.

- **File Type:** Choose your preferred file format. Bitmap Image is fine if you don't have a preference.
- **Resolution:** Set this to 150 for clean standard printing. You can set it higher for more detailed scans. For example, if the preview of a scan looks like it's missing some text, try using a higher resolution.
- **Exposure Settings:** Use these options to adjust brightness and contrast if the preview image looks too dark or too flat.

6. If you changed any of these options, you can click Preview again to see how things will look. You can keep changing settings and clicking Preview until the scan looks the way you want.

TIP

If you want to save a profile with specific settings, choose Add Profile from the Profile drop-down list. Alternatively, adjust settings and preview the document until you get the results you want. Then you can click Save Profile to make it easy to reuse those same settings when scanning similar documents in the future.

7. Click Scan to scan the document. Wait for the scanner to scan the document.

By default, Windows Fax and Scan places newly scanned documents in the Scanned Documents folder, represented by the word Scan in the left pane. You'll see a header in that folder for every document you've scanned. To change the name of a scanned document, click its current name and type in a new name.

TIP

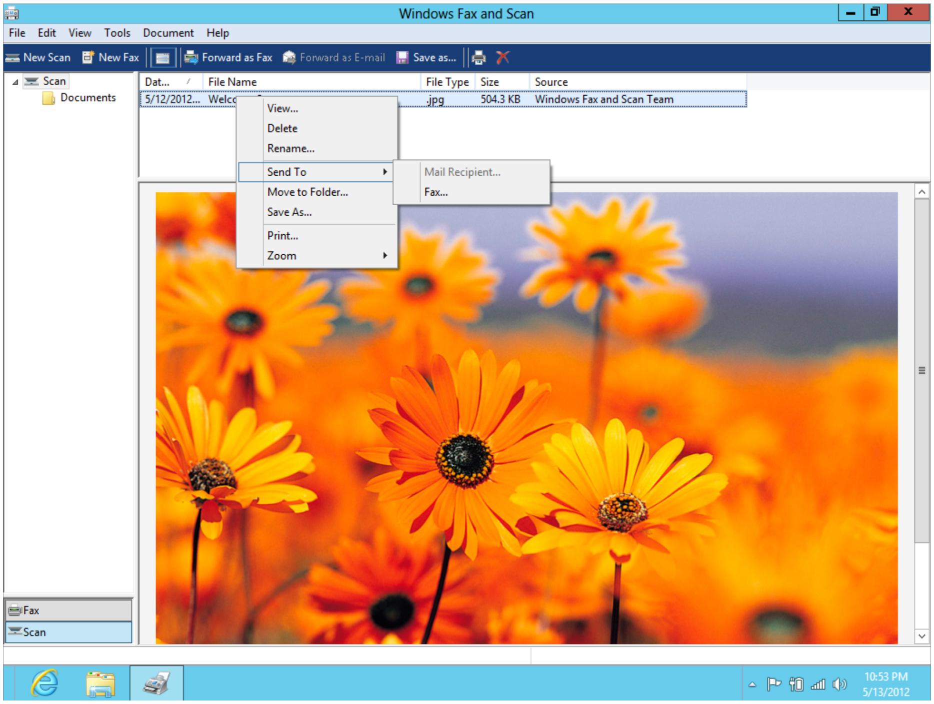
You can create additional folders under Scanned Documents to organize your scans. Right-click Scan in the left pane and choose New Folder to create a new folder. Then, to move a scanned document, right-click its header and choose Move To Folder, click a folder, and click OK.

Using scanned documents

Each document you scan is saved in the Scanned Documents folder in your Documents folder. Clicking Documents at the left side of Windows Fax and Scan shows the names of those same documents. To print, e-mail, fax, delete, or do something else with a scanned document, right-click its header in the top main pane, as in Figure 35.13.

FIGURE 35.13

Right-click a scanned document header


Windows Fax and Scan
File Edit View Tools Document Help
New Scan
New Fax
Forward as Fax
Forward as E-mail
Save as...
Scan
Documents
Dat...
File Name
File Type
Size
Source
5/12/2012...
Welc
.jpg
504.3 KB
Windows Fax and Scan Team
View...
Delete
Rename...
Send To
Move to Folder...
Save As...
Print...
Zoom
Mail Recipient...
Fax...
Fax
Scan
10:53 PM
5/13/2012

You'll find the same scanned documents in the Scanned Documents folder of your user account. Click the Start button and choose Documents ➪ Scanned Documents.

Forwarding scanned documents automatically

If you use a scanner in a local network, you can automatically send a copy of all scanned documents to another computer on the network. Choose Tools ➪ Scan Routing ➪ Automatically Forward Scans from the Windows Fax and Scan menu (while you're in the scan mode).

To forward all scans to an e-mail address, choose the first option and specify the e-mail address. Or, choose the second option and specify the folder or UNC name of the folder to which you want to forward scanned documents.

Wrap-Up

Faxing and scanning are like two sides of the same coin. When you fax a document, you essentially send a photocopy of the document to a fax machine, or to a fax program on another computer. When you scan a document, you send a photocopy of the document to a file on your own computer's hard disk. You can use Windows Fax and Scan for both operations. Here's a quick wrap-up of the main points covered in this chapter:

- To open Windows Fax and Scan, click Search from the Charms Bar, type **fax**, and then click Windows Fax And Scan.
- To work with faxes, click Faxes in the left column. To work with scans, click Scans in the left column.
- To create a new fax, click the New Fax toolbar button or choose File ➪ New Fax from the menu.
- To scan a document, load the document into the scanner and click the New Scan toolbar button. Or choose File ➪ New ➪ Scan from the menu bar.
- To work with a received fax or scanned document, right-click its header in the main pane in Windows Fax and Scan.

CHAPTER

36

Troubleshooting Printing and Faxing

IN THIS CHAPTER

Troubleshooting printing problems

Troubleshooting faxing

Finding resource to help you troubleshoot printing and faxing problems

It seems like so many computer problems come about when you try to take what's on your screen and put it onto paper format. At times, it seems as if every computer user has situations in which Windows 8 does not print or fax documents correctly. The problem may be simple (is it plugged in and turned on?) or more complex (do you need to turn on the print spooler?). During these times, it's good to know some basic troubleshooting techniques to help you diagnose and fix the problems.

Troubleshooting Printing

Because no two printers are exactly alike, printing is more a matter of knowing your printer than knowing your computer or Windows. The best we can do here is to provide some general pointers that apply to most printers. But for specifics on your printer, referring to the manual that came with the printer or the main web page for the product will be your best bet.

First aid for printing problems

Before you start digging around the computer for solutions to a printing problem, check the most common physical problems:

- Make sure that the printer is plugged in and turned on.
- If the printer has an Online/Offline switch, make sure that it's online.

- Make sure that the printer cable is connected snugly at both the printer and computer ends.
- Make sure that the printer has paper.
- Make sure that the printer has ink or toner.
- Check for, and clear, a paper jam.

If none of the preceding help, take a look at the Help topics for printing, as described next.

Document appears to print, but nothing comes out of the printer

You may have selected a printer that produces files (such as the Microsoft XPS Document Writer). After you choose File ➪ Print to print a document, make sure you choose an appropriate printer from the Print dialog box. To avoid making this mistake, make the printer you use most often the default printer, as discussed in Chapter 32.

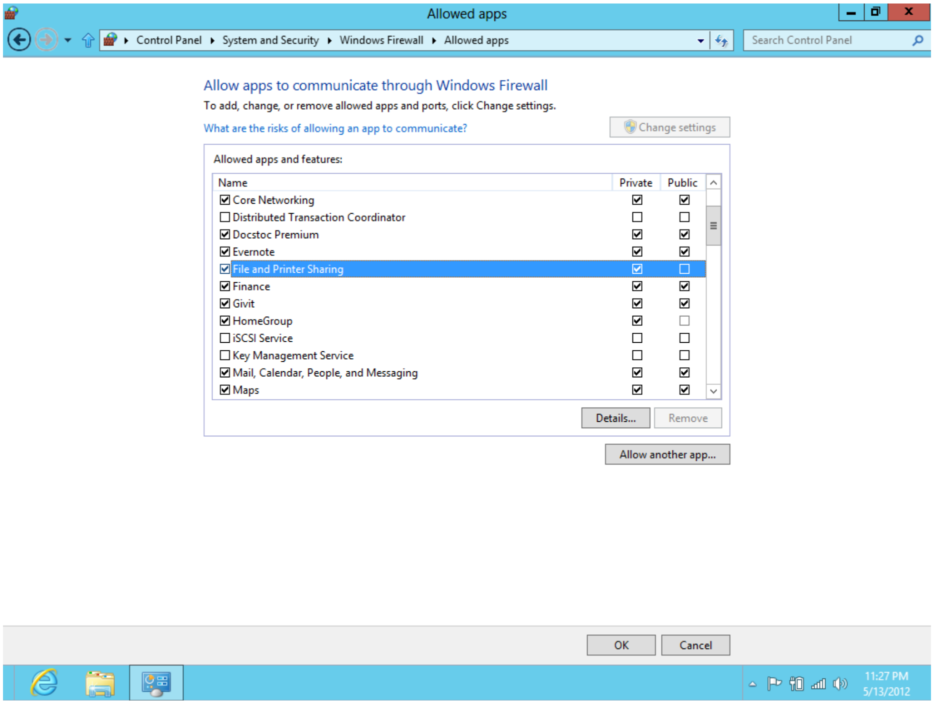
Problem with a network printer

If your computer is a member of a network and your printing problems start right after installing or upgrading to Windows 8, the most likely problem is that the firewall has blocked communication with the printer. You'll need administrative privileges to unblock the firewall port. Follow these steps on each computer involved to enable them to share their printers:

1. Open the Windows Firewall applet from the Control Panel and click the Allow An App Or Feature Through Windows Firewall link.
2. Click Change Settings, enter a password if prompted, and in the Allowed Apps And Features list, make sure that File And Printer Sharing is selected, as shown in Figure 36.1.
3. Click OK and close Control Panel.

FIGURE 36.1

File And Printer Sharing enabled in Windows Firewall


Allowed apps
Control Panel ▸ System and Security ▸ Windows Firewall ▸ Allowed apps
Search Control Panel
Change settings
Details...
Remove
Allow another app...
OK
Cancel
11:27 PM
5/13/2012

Allow apps to communicate through Windows Firewall

To add, change, or remove allowed apps and ports, click Change settings.

What are the risks of allowing an app to communicate?

Allowed apps and features:

Name	Private	Public
☑ Core Networking	☑	☑
☐ Distributed Transaction Coordinator	☐	☐
☑ Docstoc Premium	☑	☑
☑ Evernote	☑	☑
☑ File and Printer Sharing	☑	☐
☑ Finance	☑	☑
☑ Givit	☑	☑
☑ HomeGroup	☑	☐
☐ iSCSI Service	☐	☐
☐ Key Management Service	☐	☐
☑ Mail, Calendar, People, and Messaging	☑	☑
☑ Maps	☑	☑

Printer prints garbage

If the printer used to print properly, turn off the printer. Then, close all open program windows and turn off the computer (from the Charms Bar, choose Settings ➪ Power ➪ Shut Down). Make sure that there is no paper jam in the printer, turn the printer back on, and wait a few seconds. Then, restart the computer normally.

If the trouble persists, delete all documents in the print queue and repeat the preceding procedure. If it still persists, consider updating the printer driver as discussed later in this chapter.

Advanced printing features are disabled

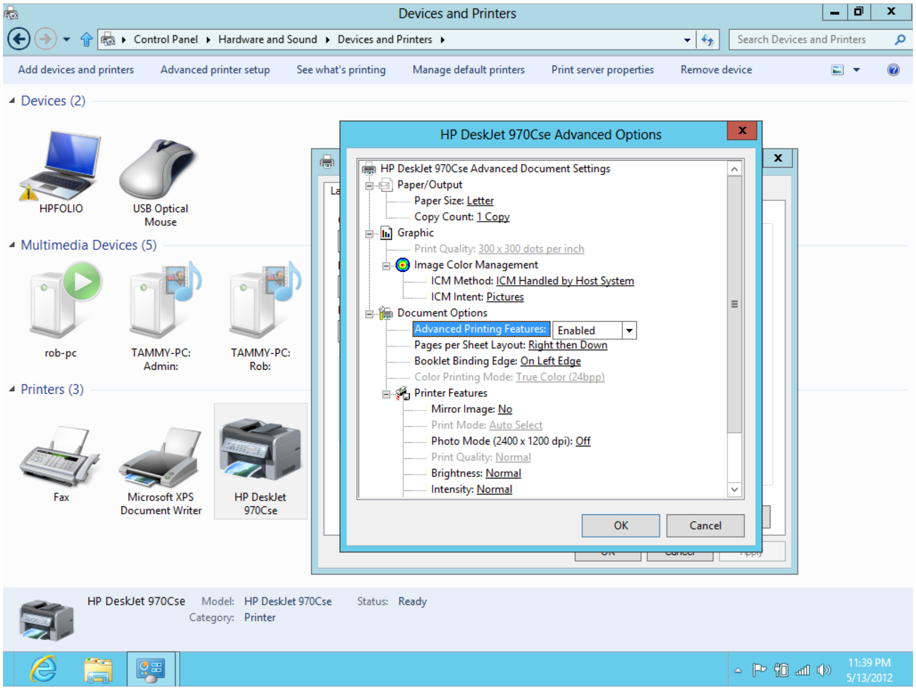
To use all the capabilities of a printer, you need to make sure that you have the most current printer drivers installed. Also, make sure that the printer's advanced features are enabled by following these steps:

1. On the desktop, press Windows+X and choose Control Panel.
2. Click View Devices And Printers to open the Devices And Printers window.

2. Right-click the icon for the printer, and choose Printing Preferences.
3. Click the Advanced tab.
4. If you see Disabled next to Advanced Printing Features under Document Options, click that word and choose Enabled, as shown in Figure 36.2.
5. Click OK in all open dialog boxes.

FIGURE 36.2

Advanced Options dialog box for a sample printer


Devices and Printers
Control Panel ▸ Hardware and Sound ▸ Devices and Printers ▸
Search Devices and Printers
Add devices and printers
Advanced printer setup
See what's printing
Manage default printers
Print server properties
Remove device
Devices (2)
HPFOLIO
USB Optical Mouse
Multimedia Devices (5)
rob-pc
TAMMY-PC: Admin:
TAMMY-PC: Rob:
Printers (3)
Fax
Microsoft XPS Document Writer
HP DeskJet 970Cse
HP DeskJet 970Cse Advanced Options
OK
Cancel
11:39 PM
5/13/2012

HP DeskJet 970Cse Advanced Document Settings
- Paper/Output
  - Paper Size: Letter
  - Copy Count: 1 Copy
- Graphic
  - Print Quality: 300 x 300 dots per inch
  - Image Color Management
    - ICM Method: ICM Handled by Host System
    - ICM Intent: Pictures
- Document Options
  - Advanced Printing Features: Enabled
  - Pages per Sheet Layout: Right then Down
  - Booklet Binding Edge: On Left Edge
  - Color Printing Mode: True Color (24bpp)
  - Printer Features
    - Mirror Image: No
    - Print Mode: Auto Select
    - Photo Mode (2400 x 1200 dpi): Off
    - Print Quality: Normal
    - Brightness: Normal
    - Intensity: Normal

HP DeskJet 970Cse Model: HP DeskJet 970Cse Status: Ready
Category: Printer

Printed colors don’t match screen colors

On some Hewlett Packard and Canon BubbleJet printers, ICM (Image Color Management) may use the incorret colors on the printed page. To fix the problem, go to the Advanced Options and choose Disable ICM.

Error message “Problem Communicating with Printer”

This error occurs on some Lexmark printers that connect through a USB port. Getting the latest driver for the printer should resolve the problem. Optionally, you can turn off the USB hub’s ability to turn off the device as follows:

1. From the desktop, press Windows+X and click Device Manager.
2. Click the arrow next to Universal Serial Bus controllers in the right pane.
3. Right-click USB Root Hub and choose Properties.
4. Click the Power Management tab.
5. Clear the Allow The Computer To Turn Off This Device To Save Power check box.
6. Click OK in the Properties dialog box.

NOTE

If you have multiple USB root hubs, you'll need to repeat Steps 3 through 6 for each one.

7. Close Device Manager.

Updating your printer driver

A printer driver that's not specifically designed for Windows 8 can cause problems such as the printer not printing at all to garbled printer output. Most printer manufacturers submit updated drivers to Microsoft so you may be able to update your printer driver right from Microsoft's Update website. You'll need to sign into a user account that has administrative privileges. Also, make sure your computer is online. Then open the Windows Update applet from the Control Panel and check for new updates. If there are no new updates for the printer, navigate to the printer manufacturer's website and search for a new driver. If you can't find a Windows 8 driver, you can probably use the Windows 7 version of the driver.

Troubleshooting Faxing

Like printing and scanning, faxing is more a matter of knowing your specific faxing hardware than it is about knowing your computer or Windows. Your best bet is to learn to use your fax hardware as described in the manual that came with the hardware device before you try to fax directly from Windows or a program. Again, the best we can do here is to provide some general troubleshooting tips.

Windows 8 only provides access to your faxing hardware. To learn to use the faxing features that are part of an all-in-one printer, refer to the manual that came with the printer, or the manual that came with your fax modem or computer. If the fax device came with its own software, you may be better off using that software as opposed to Windows Fax and Scan.

Also, make sure that the fax phone port on your computer or printer is attached to a phone jack on the wall.

TIP

Remember that if you're trying to send a document that's already on your hard disk (as opposed to on paper only), you'll get better results by e-mailing the document as an attachment.

Printing and Faxing Troubleshooting Resources

Not all printers or fax modems are the same. Be sure to check the instruction manual that came with your printer or fax device for their troubleshooting suggestions.

You can also check Windows built-in help and support for troubleshooting tips. On the Start screen, type **help** and then click Help and Support.

For additional help, post a question in the Windows social networking tools, such as Facebook, Twitter, or a related blog. See Chapter 18 for information on accessing the social networking features of Windows 8.

Wrap-Up

If you are like most computer users, you will have times when Windows 8 does not print or fax documents correctly. During these times, it's good to know some basic troubleshooting techniques to help you diagnose and (hopefully) fix the problems.

In this chapter, the following main points were discussed:

- Ways to troubleshoot printer problems
- Ways to troubleshoot faxing problems
- Finding resources to help solve printing and faxing problems

Part VIII

Installing and Removing Programs

IN THIS PART

Chapter 37
Adding and Managing Windows 8 Applications

Chapter 38
Installing and Upgrading Legacy Programs

Chapter 39
Getting Older Programs to Run

Chapter 40
Repairing and Removing Programs

Chapter 41
Setting Default Programs

Chapter 42
Managing Programs and Processes

Chapter 43
Troubleshooting Software Problems

CHAPTER 37

Adding and Managing Windows 8 Applications

IN THIS CHAPTER

- Using the Windows Store
- Installing apps
- Updating apps
- Removing apps

The Windows Store is an online location where you can find and install Windows 8 apps. Once you find an app you like, you must install it on your computer before you can start using it.

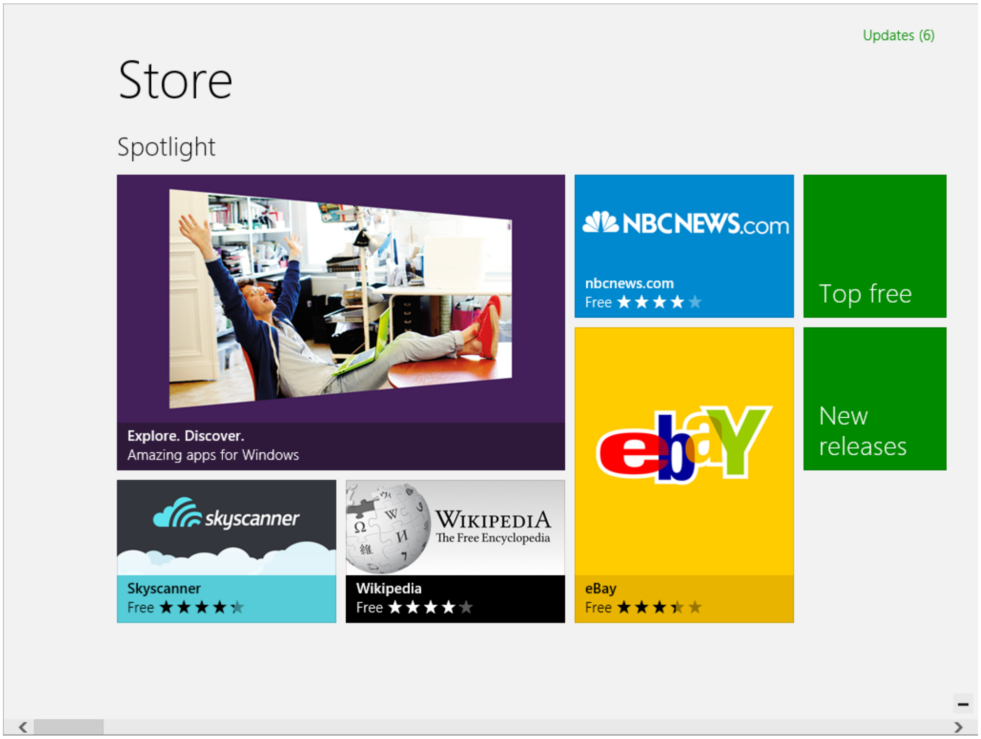
This chapter explores how to access the Windows Store, how to navigate it, how to install apps, how to look for and install app updates, and how to remove apps.

Using the Windows Store

The Windows Store (shown in Figure 37.1) is a new feature of Windows 8. It provides an online area where you can download Windows 8 apps for your computer, tablet, or Windows phone. Windows 8 apps are typically single-functioning applications (for example, reading and responding to Twitter feeds) designed for the Windows 8 interface and must adhere to strict application development guidelines before they are approved for the Windows Store. Users can browse the Windows Store for apps. (Future Windows Store offerings might include full-featured applications, such as Microsoft Office.)

FIGURE 37.1

The new Windows Store available with Windows 8


Updates (6)
Store
Spotlight
Explore. Discover.
Amazing apps for Windows
NBCNEWS.com
nbcnews.com
Free ★★★★★
Top free
New releases
ebY
skyscanner
Skyscanner
Free ★★★★★
Wikipedia
The Free Encyclopedia
Wikipedia
Free ★★★★★
eBay
Free ★★★★★

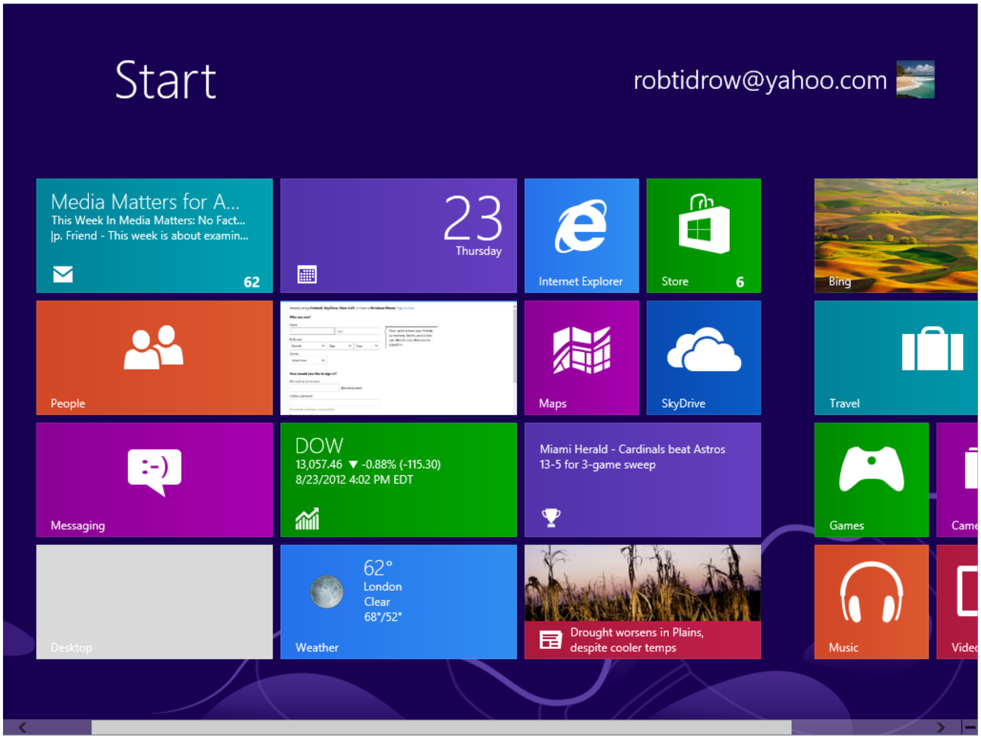
As you read in Chapter 2, "Navigating the Windows 8 Interface," the Windows 8 interface represents a shift toward touch-based interaction with the operating system and applications, driven in large part by the growth of the tablet and handheld device markets. But Windows 8 is not just about touch; it's also about simplification and putting applications within easy reach. The Windows Store makes acquiring apps easy and quick. The Windows Store is available online and requires that your computer meet the following requirements:

- High-speed Internet connection.
- Screen resolution of at least 1024 × 768.
- For the Snap feature to work, your screen resolution must be set to a minimum of 1366 × 768.

To use the Windows Store, show the Start screen and click the Store app tile (shown in Figure 37.2). The Windows Store page appears, as shown previously in Figure 37.1.

FIGURE 37.2

The Windows Store tile on the Start screen

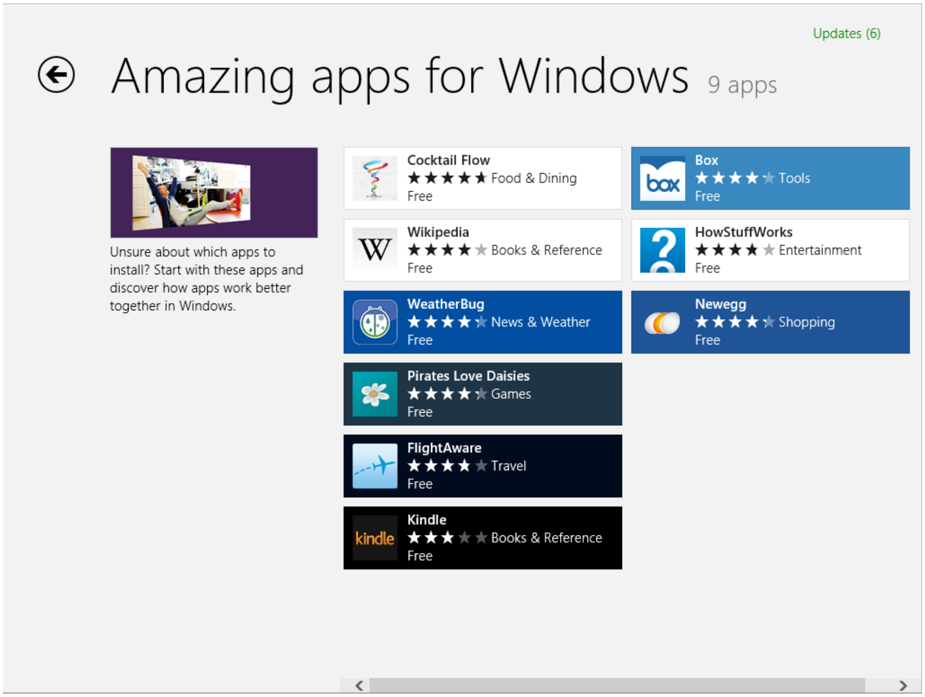

Start
robtidrow@yahoo.com
Media Matters for A...
This Week In Media Matters: No Fact...
|p. Friend - This week is about examin...
62
23
Thursday
Internet Explorer
Store 6
Bing
People
Maps
SkyDrive
Travel
Messaging
DOW
13,057.46 ▼ -0.88% (-115.30)
8/23/2012 4:02 PM EDT
Miami Herald - Cardinals beat Astros
13-5 for 3-game sweep
Games
Came
Desktop
62°
London
Clear
68°/52°
Weather
Drought worsens in Plains,
despite cooler temps
Music
Vide

Reviewing Windows 8 apps

Using the Windows Store is pretty straightforward. When you enter the site, the Spotlight area highlights some of the most popular apps. Click the Amazing Apps For Windows 8 tile to see a quick list of a dozen common apps that Microsoft suggests you start with. At the time of this writing, the following apps were suggested by clicking on this tile (see Figure 37.3):

FIGURE 37.3

The Amazing Apps for Windows 8 screen displays 12 suggested apps to start with.



Updates (6)

Amazing apps for Windows 9 apps

Unsure about which apps to install? Start with these apps and discover how apps work better together in Windows.

Cocktail Flow
★★★★★ Food & Dining
Free

Wikipedia
★★★★☆ Books & Reference
Free

WeatherBug
★★★★☆ News & Weather
Free

Pirates Love Daisies
★★★★☆ Games
Free

FlightAware
★★★★☆ Travel
Free

Kindle
★★★☆☆ Books & Reference
Free

Box
★★★★☆ Tools
Free

HowStuffWorks
★★★★☆ Entertainment
Free

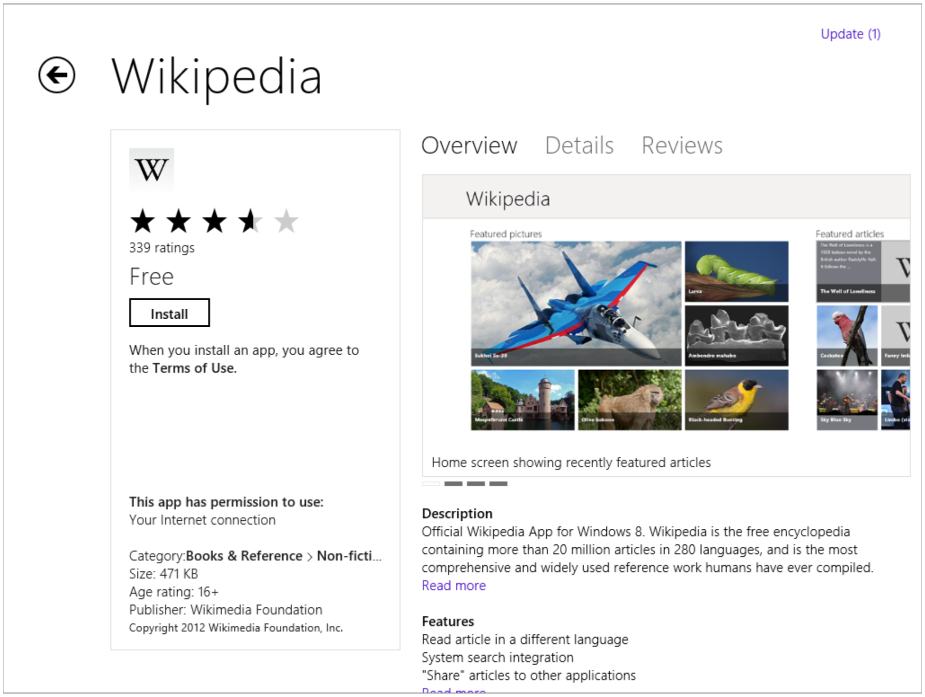
Newegg
★★★★☆ Shopping
Free

- **Cocktail Flow:** A food and dining app that lists and shows recipes for creating cocktails.
- **Wikipedia:** A reference app for accessing Wikipedia, the most popular online encyclopedia. Figure 37.4 shows the Wikipedia app overview in the Windows Store.
- **WeatherBug:** An app that brings local, national, or global weather and news to your desktop, tablet, or phone.
- **Pirates Love Daisies:** A pirate games app.
- **FlightAware:** A travel app that enables you to see real-time flight status of flights from different airlines.
- **Kindle:** A book app for downloading, reading, and managing e-books from Amazon.com's Kindle Store.

- **Box:** A file-sharing app to let you store and share files in the cloud.
- **HowStuffWorks:** An app that answers many questions you may have about common things around your house or work.
- **Newegg:** A shopping app for accessing merchandise from Newegg.com.

FIGURE 37.4

The Wikipedia app shown in the Windows Store



Update (1)

Wikipedia

★★★★☆

339 ratings

Free

Install

When you install an app, you agree to the **Terms of Use.**

This app has permission to use:
Your Internet connection

Category:**Books & Reference › Non-ficti...**
Size: 471 KB
Age rating: 16+
Publisher: Wikimedia Foundation
Copyright 2012 Wikimedia Foundation, Inc.

Overview Details Reviews

Wikipedia

Featured pictures
Sukhoi Su-30
Larva
Ambondro mahabo
Mespelbrunn Castle
Olive baboon
Black-headed Bunting
Featured articles
The Well of Loneliness is a 1928 lesbian novel by the British author Radclyffe Hall. It follows the ...
The Well of Loneliness
Cockatoo
Sky Blue Sky

Home screen showing recently featured articles

Description
Official Wikipedia App for Windows 8. Wikipedia is the free encyclopedia containing more than 20 million articles in 280 languages, and is the most comprehensive and widely used reference work humans have ever compiled.
Read more

Features
Read article in a different language
System search integration
"Share" articles to other applications

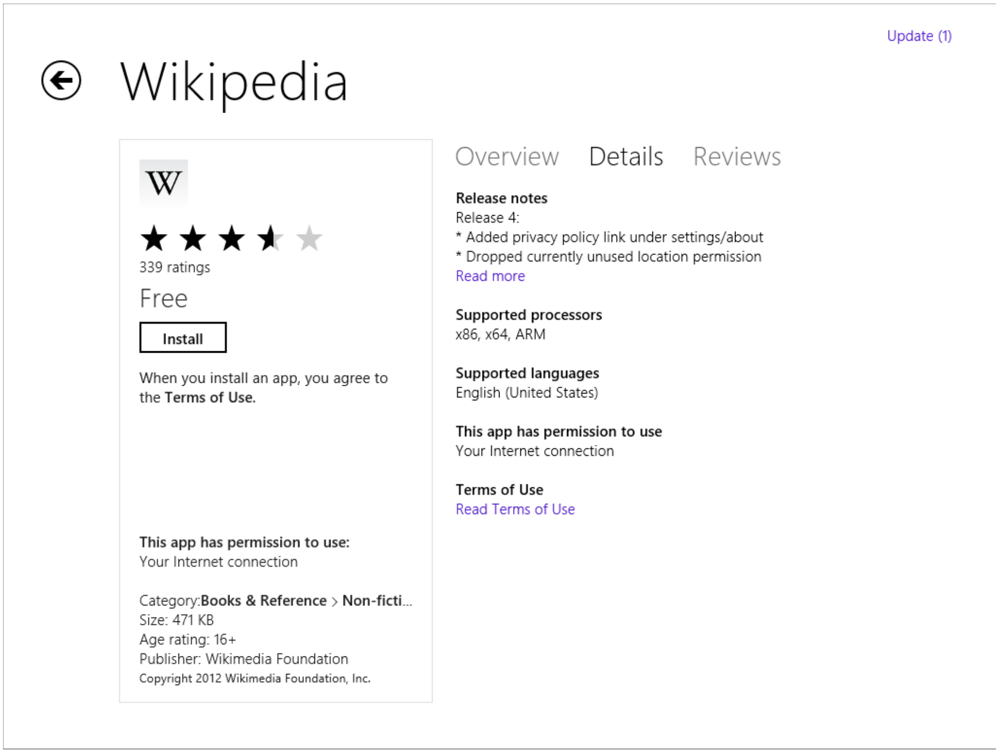
> **NOTE**
>
> Microsoft releases guidelines for programmers who want to create Windows 8 apps. Besides programming requirements, the guidelines also list general requirements for all apps: For example, apps cannot contain adult material, cannot include defamatory or obscene material, and cannot include content that encourages irresponsible use of alcohol, tobacco, drugs, or weapons.

To learn more about an app, click its title. A page appears that includes information about the app, such as cost (many apps are free), ratings, description, and features.

Click the Details link to read more technical information about an app, such as release notes, processor types that are supported, languages, and the types of permissions the app has with other resources on your computer. Figure 37.5 shows an example of the Details page for the Wikipedia app.

FIGURE 37.5

The Details page of the Wikipedia app



When you install an app, you agree to the Terms of Use.

This app has permission to use:
Your Internet connection

Category:Books & Reference > Non-ficti...
Size: 471 KB
Age rating: 16+
Publisher: Wikimedia Foundation
Copyright 2012 Wikimedia Foundation, Inc.

Release notes
Release 4:
* Added privacy policy link under settings/about
* Dropped currently unused location permission
Read more

Supported processors
x86, x64, ARM

Supported languages
English (United States)

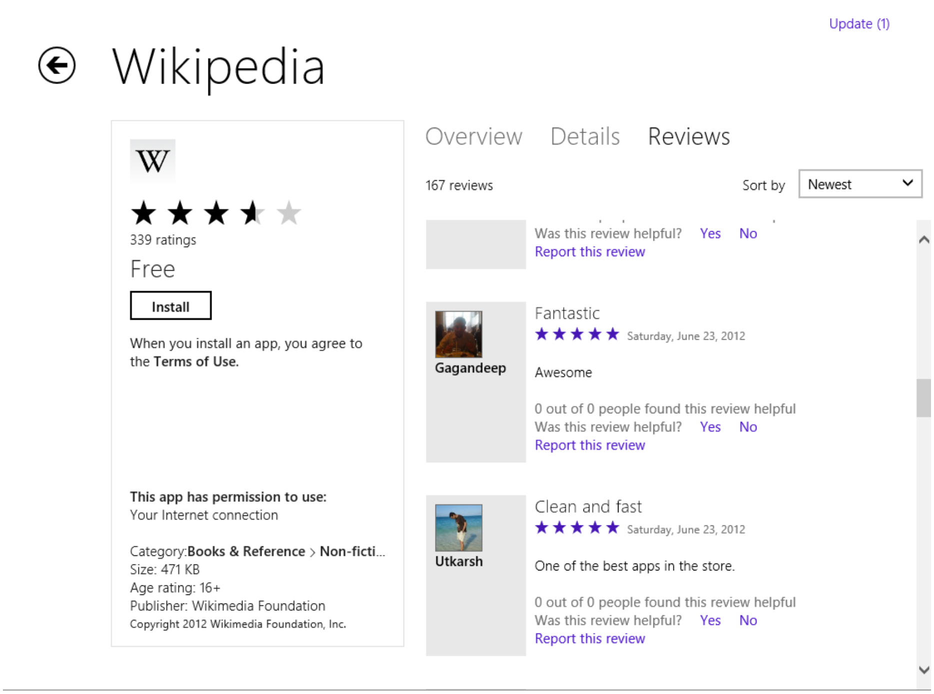
This app has permission to use
Your Internet connection

Terms of Use
Read Terms of Use

To learn what other users have to say about the app, click the Review link (see Figure 37.6). This shows any reviews that have been added for the app. You can add a review as well by clicking the Write A Review link on the left side of the screen and filling out the resulting form.

FIGURE 37.6

You can read reviews of an app on the Reviews page.



Update (1)

Wikipedia

Overview Details Reviews

339 ratings

Free

Install

When you install an app, you agree to the **Terms of Use.**

This app has permission to use:
Your Internet connection

Category:**Books & Reference** > **Non-ficti...**
Size: 471 KB
Age rating: 16+
Publisher: Wikimedia Foundation
Copyright 2012 Wikimedia Foundation, Inc.

167 reviews

Sort by Newest

Was this review helpful? Yes No
Report this review

Gagandeep
Fantastic
★★★★★ Saturday, June 23, 2012
Awesome
0 out of 0 people found this review helpful
Was this review helpful? Yes No
Report this review

Utkarsh
Clean and fast
★★★★★ Saturday, June 23, 2012
One of the best apps in the store.
0 out of 0 people found this review helpful
Was this review helpful? Yes No
Report this review

Navigating the Windows Store

Navigating the Windows Store is like navigating a full-screen web page. All of the information for a page is displayed on a single page so you do not have to scroll down very much. Instead, additional Windows Store pages are accessed by scrolling to the right using one of the following methods:

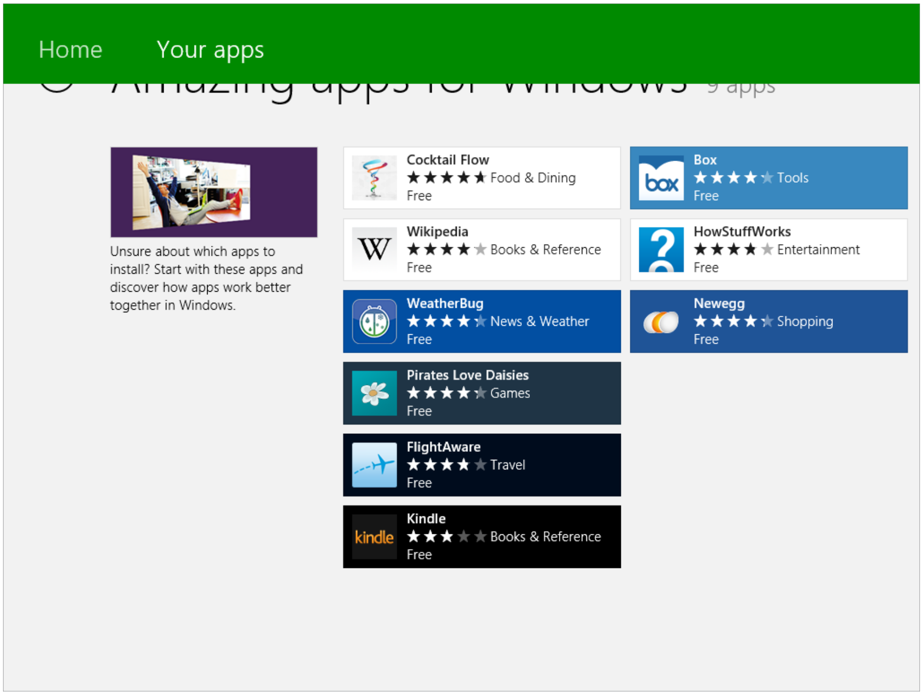
- If you have a scroll wheel on your mouse, scroll toward you to scroll to pages to the right. Scroll away from you to return to previous pages on the left.
- Drag the scroll bar at the bottom of the page to the right to see additional pages to the right. Scroll to the left to return to previous pages on the left.
- On touch devices, swipe from right to left to see pages on the right. Swipe left to right to return to previous pages on the left.

You can navigate back to the main Windows Store page by using the following methods:

- Clicking the Back button on the top left of the window. You may have to do this several times if you have viewed several pages already.
- Using the three methods listed previously to return to previous pages to the left until you arrive at the main Windows Store page.
- Right-clicking the top of a page or swipe down from the top edge of the page to show the app menu. From this menu (see Figure 37.7) click Home to return immediately to the Windows Store home page.

FIGURE 37.7

Click Home to immediately return to the Windows Store home page.


Home
Your apps
Cocktail Flow
Food & Dining
Free
Box
Tools
Free
Wikipedia
Books & Reference
Free
HowStuffWorks
Entertainment
Free
WeatherBug
News & Weather
Free
Newegg
Shopping
Free
Pirates Love Daisies
Games
Free
FlightAware
Travel
Free
Kindle
Books & Reference
Free

Unsure about which apps to install? Start with these apps and discover how apps work better together in Windows.

Windows Store categories

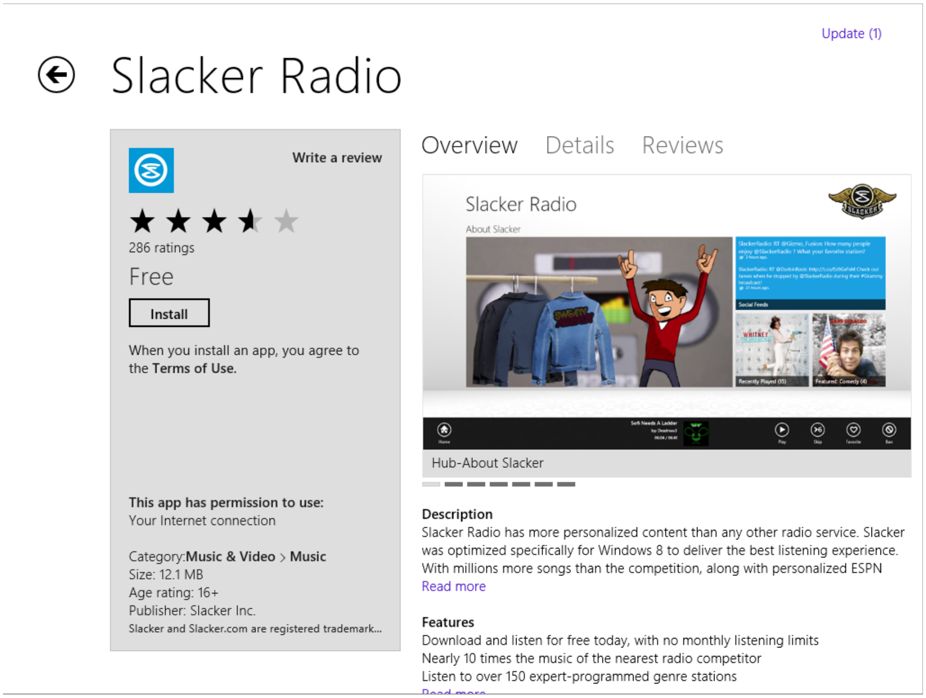
The Windows Store displays apps in categories to help you locate them. Apps are available within the following main categories:

- **Games:** Provides game apps, such as Fruit Ninja, Cut the Rope, Mahjong Deluxe, and more.
- **Social:** Provides apps for accessing social media sites, such as Rowi and Tweetro for Twitter, WordPress.com for WordPress sites, FlipToast for Facebook and Twitter, and more.
- **Entertainment:** Shows apps that provide entertainment value, such as the Naturespace Holographic Audio app, Kids Song Machine apps, and the CW TV network app.
- **Photo:** Lists digital photography apps, such as Camera, Photo Monkey, and Composite.
- **Music & Video:** Shows apps for sharing and storing videos, accessing podcasts, listening to Internet radio, and working with music. Apps you can find in this category include Givit, SlapDash Podcasts, and Slacker Radio (see Figure 37.8).
- **Sports:** Provides sports-related apps, such as Major League Soccer, Basketball Coach's Clipboard, and New Zealand Cricket.
- **Books & Reference:** Shows apps relating to books, e-books, references, the Bible, and online magazines.
- **News & Weather:** Provides apps for news and weather resources, such as the *Los Angeles Times*, *USA Today*, and AccuWeather.com.
- **Health & Fitness:** Lists apps for helping you stay healthy, get in shape, and lose weight, including Fit Ball and Medicine Cabinet.
- **Food & Dining:** Provides recipe and food- and drink-related apps, such as Fine Cooking, Cocktail Flow, Matias Winery, and AllRecipes.
- **Lifestyle:** Lists apps that fall into general lifestyle areas, such as AutoTrader, PRINZ Cityguide, and AuctionKing.
- **Shopping:** Shows apps for shopping, such as Yellow Pages, Amazon Windows 8 for Windows, and CBAZAAR.
- **Travel:** Lists travel-related apps, such as Kayak Hotels, INRIX Traffic, and Navitime.
- **Finance:** Provides apps for helping you manage finances, including the Finance app and the Ameriprise Financial app.
- **Productivity:** Includes apps for computer and tablet productivity, including EverNote, Skitch, and Quick Note.
- **Tools:** Shows computer tools, such as WinZip 16.5, Maps, and Dr.eye.

- **Security:** Lists computer security-related apps. At the time of this writing, the Security category does not have any apps listed.
- **Business:** Shows apps that help you in the business world, such as MyStarJob, Captain Dash, and Presenter.
- **Education:** Provides educational apps, such as SATMax, My Baby Piano, Star Chart, and ICT Break.
- **Government:** Lists government-related apps. At the time of this writing, the Government category does not have any apps listed.

FIGURE 37.8

Use the Slacker Radio app to tune into Internet radio stations.



Update (1)

Slacker Radio

Write a review

★★★★☆

286 ratings

Free

Install

When you install an app, you agree to the **Terms of Use**.

This app has permission to use:
Your Internet connection

Category:**Music & Video** > **Music**
Size: 12.1 MB
Age rating: 16+
Publisher: Slacker Inc.
Slacker and Slacker.com are registered trademark...

Overview Details Reviews

Hub-About Slacker

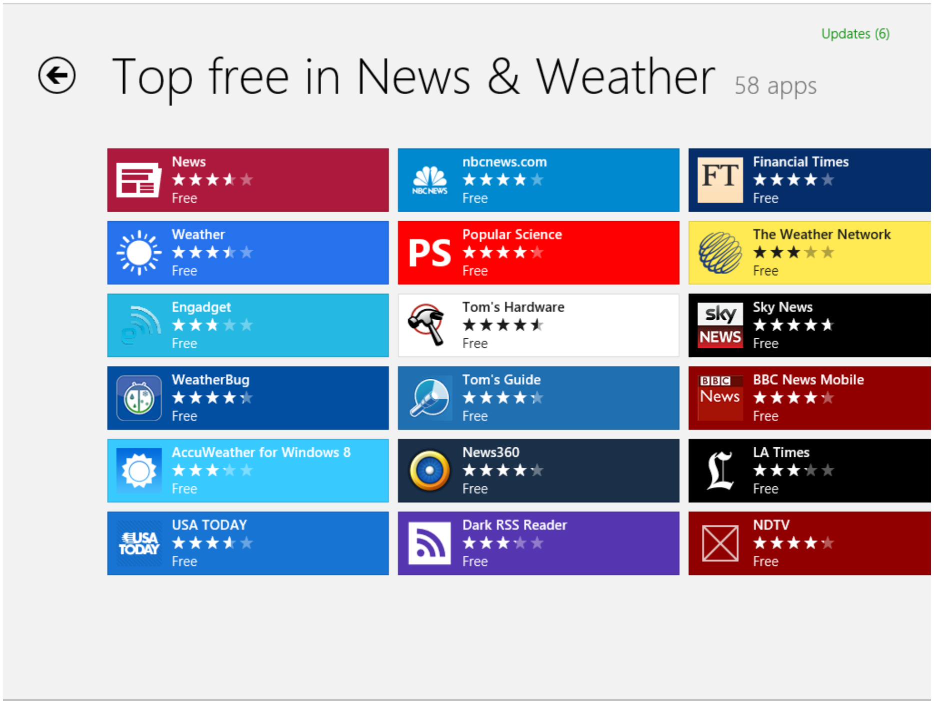
Description
Slacker Radio has more personalized content than any other radio service. Slacker was optimized specifically for Windows 8 to deliver the best listening experience. With millions more songs than the competition, along with personalized ESPN
Read more

Features
Download and listen for free today, with no monthly listening limits
Nearly 10 times the music of the nearest radio competitor
Listen to over 150 expert-programmed genre stations
Read more

Within each category, individual apps are showcased. Some categories also show an All Stars category for apps that have been rated the highest for a category, a New Releases category for just released apps, and a Top Free category that lists top-rated free apps. Figure 37.9 shows Top Free apps in the News & Weather category.

FIGURE 37.9

Look for free apps in the Top Free categories.


Updates (6)
Top free in News & Weather 58 apps
News
Free
nbcnews.com
Free
Financial Times
Free
Weather
Free
Popular Science
Free
The Weather Network
Free
Engadget
Free
Tom's Hardware
Free
Sky News
Free
WeatherBug
Free
Tom's Guide
Free
BBC News Mobile
Free
AccuWeather for Windows 8
Free
News360
Free
LA Times
Free
USA TODAY
Free
Dark RSS Reader
Free
NDTV
Free

Costs of apps

The costs of apps vary. Typically the costs fall into one of three payment structures:

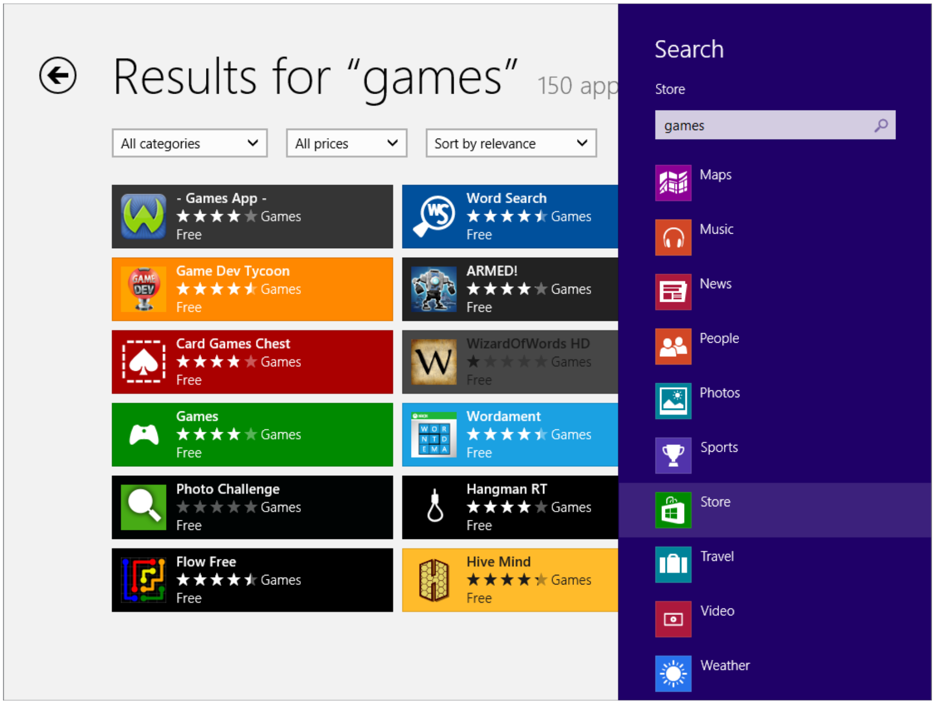
- **Free:** Many free apps are free because they also include built-in advertisements to offset the cost of development, support, and upgrades. In some cases, you have the option of upgrading from a free version to a full-featured version that includes additional features and no ads.
- **Trial:** Gives you many of the features available in a full paid version, but for a limited time period.
- **Paid:** Gives you access to a full version of the app. Costs vary from 99 cents to several hundred dollars.

Searching for apps

Because the Windows Store is itself a Windows 8 app, you can use the Windows Search tool to locate apps in the Windows Store. To do this, display the Charms Bar and click Search. In the Search field, type an app name or a keyword for an app and press Enter. The Windows Store returns a listing of apps that meet your search criteria. Figure 37.10, for example, shows a screen with the Search tool visible with a keyword called **games** and a search results screen from the Windows Store.

FIGURE 37.10

Use Windows' Search tool to locate Windows Store apps.


Results for "games"
150 app
All categories
All prices
Sort by relevance
- Games App - Games Free
Word Search Games Free
Game Dev Tycoon Games Free
ARMED! Games Free
Card Games Chest Games Free
WizardOfWords HD Games Free
Games Games Free
Wordament Games Free
Photo Challenge Games Free
Hangman RT Games Free
Flow Free Games Free
Hive Mind Games Free
Search
Store
games
Maps
Music
News
People
Photos
Sports
Store
Travel
Video
Weather

Installing Windows 8 apps

When you find an app you like, you must first install it before you can use it on your computer or tablet. Apps are very easy to install. Click an app tile to show the app's description page. Next, click the Install button on the left side of the page. The Windows Store shows a message at the top of the page that your app is installing. Once it is installed, Windows displays a message notifying you of the installation.

After the app is installed on your computer, the install button is no longer available when you go to the app's page in the Windows Store. Instead, it shows that you own this app.

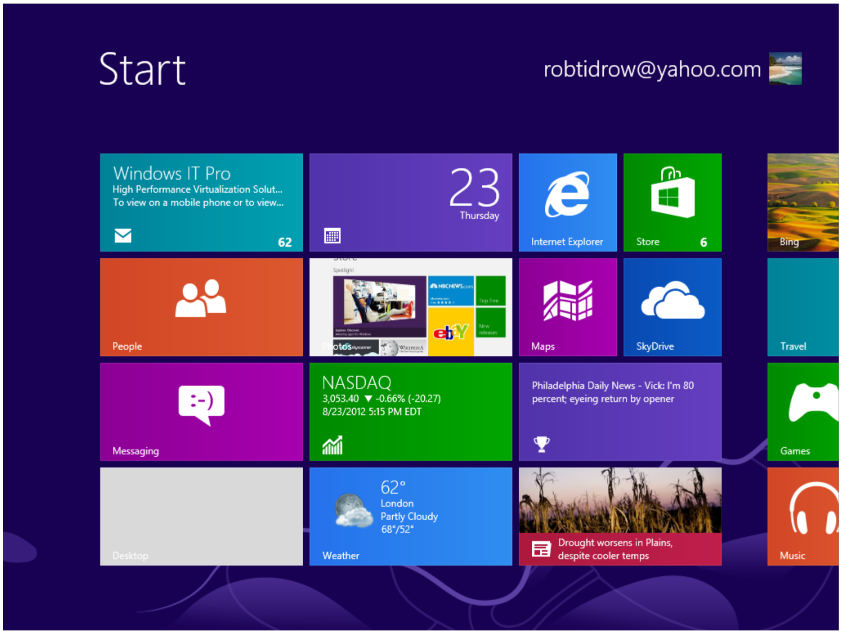
To start using the app, display the Start screen and click the app's tile.

Updating Apps

Periodically, app developers enhance an app by adding features or improving its performance by providing an update. If updates are available, the Store tile on the Windows Start screen shows a number corresponding to the number of updates available. In Figure 37.11, for example, the Store tile shows "6," which lets you know that you have six apps with an update available.

FIGURE 37.11

Windows 8's live tiles show when an update is available for an app you have installed.


Start
robtidrow@yahoo.com
Windows IT Pro
High Performance Virtualization Solut...
To view on a mobile phone or to view...
62
23
Thursday
Internet Explorer
Store
6
Bing
People
Photos
Maps
SkyDrive
Travel
Messaging
NASDAQ
3,053.40 ▼ -0.66% (-20.27)
8/23/2012 5:15 PM EDT
Philadelphia Daily News - Vick: I'm 80 percent; eyeing return by opener
Games
Desktop
62°
London
Partly Cloudy
68°/52°
Weather
Drought worsens in Plains, despite cooler temps
Music

Click that tile to open the Windows Store. At the top right of the Windows Store, click Update. Windows displays the App Updates page and begins the process of downloading updates available for your installed apps. These updates run in the background and display a message when the updates are installed on your computer.

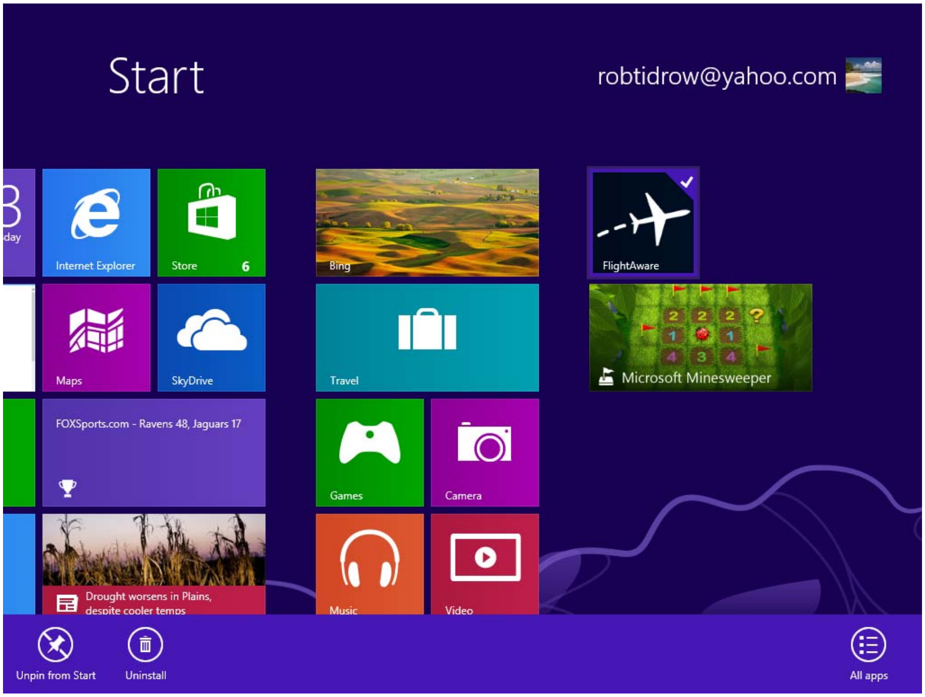
Removing Apps

If you no longer want an app installed on your computer, you can remove it by uninstalling it. To do this, use the following steps:

1. Display the Start screen.
2. Right-click the app that you want to remove. Windows puts a checkmark on the app's tile and displays a menu at the bottom of the screen (see Figure 37.12).
3. Click Uninstall from the menu. A message appears telling you that the app will be removed and any information related to that app will also be removed.
4. Click the Uninstall button to remove the selected app.

FIGURE 37.12

Use the Uninstall feature to remove an app from your computer.


Start
robtidrow@yahoo.com
day
Internet Explorer
Store
6
Bing
FlightAware
Maps
SkyDrive
Travel
Microsoft Minesweeper
FOXSports.com - Ravens 48, Jaguars 17
Games
Camera
Drought worsens in Plains, despite cooler temps
Music
Video
Unpin from Start
Uninstall
All apps

Wrap-Up

The Windows Store provides access to many different types of apps, including productivity apps, games, news apps, and more.

Here's a quick summary of the main points presented in this chapter:

- You use the Windows Store to install apps to your computer.
- Apps are divided into categories in the Windows Store, such as Social, Entertainment, Business, and Productivity.
- Many apps are free.
- You use the Windows Store to install updates to your installed apps.
- To remove an app from Windows, right-click it and click Uninstall. Click Uninstall to confirm that you want to remove that app.

CHAPTER 38

Installing and Upgrading Legacy Programs

IN THIS CHAPTER

- Playing it safe with program installations
- Updating versus upgrading
- Installing programs from disks

Unlike documents, which you can freely copy to your hard disk and use on the spot, most new programs you acquire need to be installed before you can use them. The installation process configures the software to work with your particular hardware and software. The process also creates an icon or program group on the new Windows 8 Start screen so that you can start the new program as you would any other.

You need to install a program only once, not each time you intend to use it. Once you've installed a program from a disk, you can put the disk away for safe keeping. You'll need the original installation disk to reinstall the program only if you accidentally delete it from your hard disk or if some sort of hard disk crash damages the program.

This chapter explores the common methods and issues you'll likely experience when installing programs for Windows 8. Keep in mind that the installation process, although similar across different programs, can still vary from one program to the next. So, the examples in this chapter are general, rather than specific.

NOTE

There is one rare exception to requiring installation; self-contained program files simply copy to your computer and require you to double-click them to run.

Playing It Safe with Program Installations

Programs you buy in a store aren't likely to contain any malicious code such as viruses, worms, or spyware. Those things tend to be spread by e-mail attachments and free downloads from the web. However, there's always an outside chance that the new program is incompatible with Windows 8 or a hardware device on your computer. So there may be times when you need to uninstall a program and then get all your system files back into shape to undo any changes made to your system by the new program.

NOTE

This chapter covers installing legacy application on Windows 8. For information on installing the new Windows 8 apps, refer to Chapter 36.

Windows 8's System Protection greatly simplifies the task of getting things back in shape should a program installation or upgrade cause problems. But it helps only if it's turned on and you know how to use it. For details, see Chapter 31.

Updates Versus Upgrades

Non-technical people often assume that updates and upgrades are the same thing. They aren't. An *update* is usually something you do online. There is nothing to buy at a store, no disk to insert in a disk drive. Updates are generally free, and often automatic (many programs scan for updates and offer them to you automatically). You don't have to make an effort to seek those out and install them.

Updates for some programs may not be quite so automatic. But you can often find out if any updates are available right from the program's Help menu. For example, in Microsoft Office 2010 programs, click the File tab and choose Help. On the right pane, click Check For Updates to search the web for any Microsoft Office-related updates.

TIP

You can also use Windows Update to check for Microsoft product updates. See Chapter 9 to learn about Windows Update.

Unlike updates, upgrades are usually not free. You have to purchase them and install them. For example, let's say you have Microsoft Office 2007 installed on a computer. You want to get Office 2010 on that computer. In that case, you'd seek out an Office 2010 *Upgrade Edition* (which is cheaper than the regular edition). Then you'd install that upgrade edition right over your existing version. In other words, you wouldn't uninstall (remove) your existing version first.

Installing and Upgrading from a Disk

Before you get started here, you must have administrative privileges to install a program. In other words, you need to know the password for an administrative account on your computer. If you have a limited user account and don't know the administrative password, you'll need to get an administrator to install the program for you.

Most programs that you purchase will be delivered on a CD, DVD, or an Internet download. You should always follow the installation instructions that come with such a program. But just so that you know what to expect, here's how the process usually works, once you have the installation files or CD/DVD in hand:

1. Although not required, it's a good idea to run the installation with no other programs running to make sure you have plenty of system resources available and that no files that need to be updated by the installation are in use. Close all open program windows on your desktop by clicking their Close buttons or by right-clicking their taskbar buttons and choosing Close.

NOTE

You don't need to close programs whose icons are in the Notification area, unless specifically instructed to by the installation instructions for the program you're installing.

2. For programs released on a disk, insert the CD or DVD into your computer's CD or DVD drive and wait a few seconds. Wait for the installation program to appear on your screen. If it doesn't appear within 30 seconds, see the section "Using the installed program" later in this chapter. Skip to Step 4.
3. For programs released on a download from the Internet, find the installation or setup file, which will usually have an .exe file extension. Double-click that file to launch it.
4. Follow the onscreen instructions to perform the installation.

That's really all there is to it. You will be presented with some questions and options along the way. Exactly what you see varies from one program to the next, but some common items include the End User License Agreement (EULA), and the option to choose a folder in which to store the program, which we discuss in a moment.

For programs on a CD/DVD, sometimes your Windows setup may not launch the installation program automatically. If nothing happens within half a minute or so after you have inserted a program's installation CD/DVD into your computer's CD/DVD drive, you may need to start the installation program manually. Here's how:

1. Open your Computer folder by clicking the File Explorer icon on the desktop taskbar and choosing Computer.
2. Open the icon that represents the drive into which you placed the disk.
3. If the installation program doesn't start automatically in a few seconds, click (or double-click) the icon named Setup or Setup.exe.

That should be enough to get the installation program started. From there you can follow the onscreen instructions to complete the installation.

The onscreen instructions and prompts you see during the installation vary from one program to the next. The next section discusses some common things you're likely to come across when installing just about any program.

Common Installation Prompts

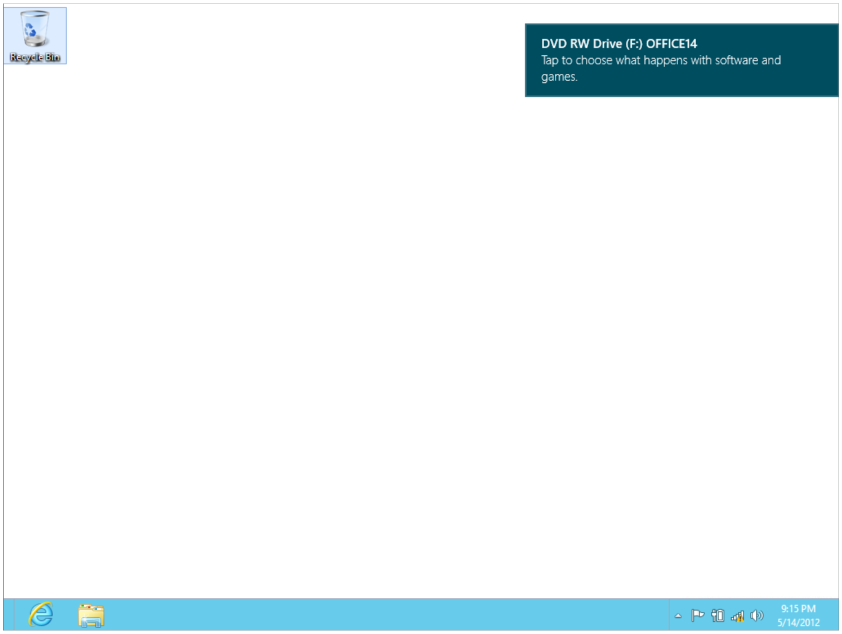
Even though every program is unique in some ways, you're likely to come across some common elements during a program installation. When you install a program, you probably won't see all the prompts described in the sections that follow, so don't be alarmed if your installation procedure is much simpler. (Be thankful instead.)

The initial CD or DVD prompt

Shortly after you insert the installation disk for a program, you may see a prompt like the one in Figure 38.1. This is a new Windows 8 setup feature. Click this message to display the actions you can take with the installation disk. Figure 38.2 shows examples of setup options Windows 8 provides. In this case, you want to choose the Run ShelExec.Exe option. The most common option is Run SETUP.EXE, which is what you would click.

FIGURE 38.1

First prompt after inserting an installation disk

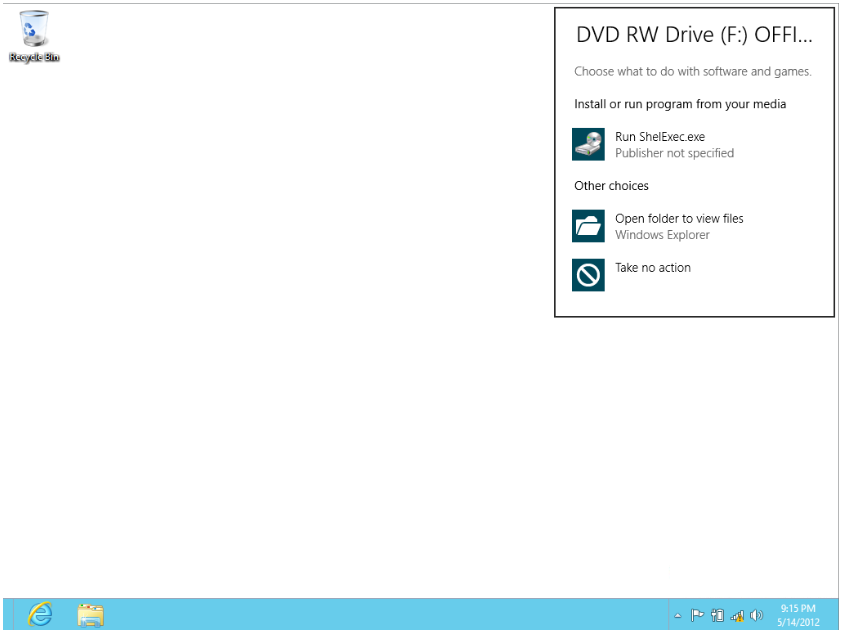


DVD RW Drive (F:) OFFICE14

Tap to choose what happens with software and games.

FIGURE 38.2

Windows 8 displays a message when it recognizes a disk with a setup program on it



DVD RW Drive (F:) OFFI...

Choose what to do with software and games.

Install or run program from your media

Run ShelExec.exe
Publisher not specified

Other choices

Open folder to view files
Windows Explorer

Take no action

Entering an administrator password

Only people with administrative privileges can install programs in Windows 8. If you're signed into a limited account, you'll see a dialog box asking you to enter an administrative password. If you are already logged on with an administrative account, Windows 8 asks you if you want to allow the program to make changes to the computer. Click Yes to continue with Setup.

The product key or serial number

Many programs (including ones published by Microsoft, Adobe, Apple, and others) require that you enter a product key or serial number to install the program. That number is usually on a sticker on the case or sleeve in which the program was delivered.

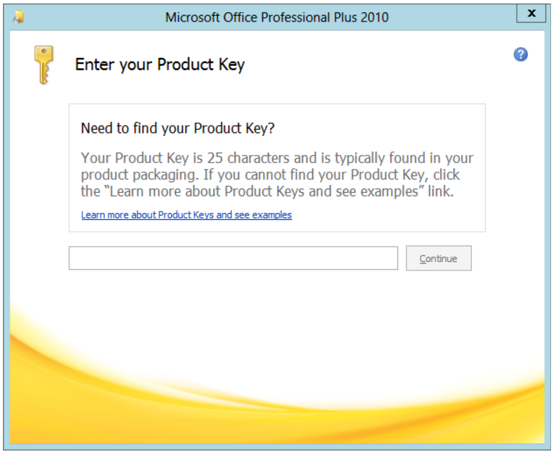
TIP

You may want to keep track of all your product keys in a word processing or spreadsheet document in case you ever need to reinstall everything. Print a copy of the document and keep it safe in case your hard disk crashes. Belarc (`www.belarc.com`) offers a free program called Belarc Adviser that lists the product keys for all your installed programs, as well as a good deal more useful information about your systems. It's one of those free programs that's worth its proverbial weight in gold! Also check out Magical Jelly Bean Finder, at `magicaljellybean.com/keyfinder`.

If you do need to enter a product key or serial number, you'll see a prompt similar to the example shown in Figure 38.3. Type the product key exactly as it is provided by the software developer, and click Continue (or whatever button the installation program offers to continue the installation process).

FIGURE 38.3

Enter a product key


Microsoft Office Professional Plus 2010
Enter your Product Key

Need to find your Product Key?

Your Product Key is 25 characters and is typically found in your product packaging. If you cannot find your Product Key, click the "Learn more about Product Keys and see examples" link.

Learn more about Product Keys and see examples
Continue

Compliance check

If you are installing an upgrade of a new program and already have the older version installed on your computer, the installation program likely will detect the existing product and move through the upgrade. In other situations, particularly where you don't already have a previous edition of the program installed, you might be prompted to insert the CD/DVD for the old version and/or enter the product key for the old version. This depends entirely on the requirements of the application's upgrade program. Follow the prompts displayed by the upgrade program to provide the requested information.

NOTE

You might see a message asking what you want to do with the CD/DVD you just inserted. You do *not* want to install the program on the CD/DVD. The goal here is to simply prove you have the older version, not to install the older version. So if you do see a dialog box asking what you want to do with the CD/DVD, click the Close (X) button in the upper-right corner of that dialog box.

User information prompt

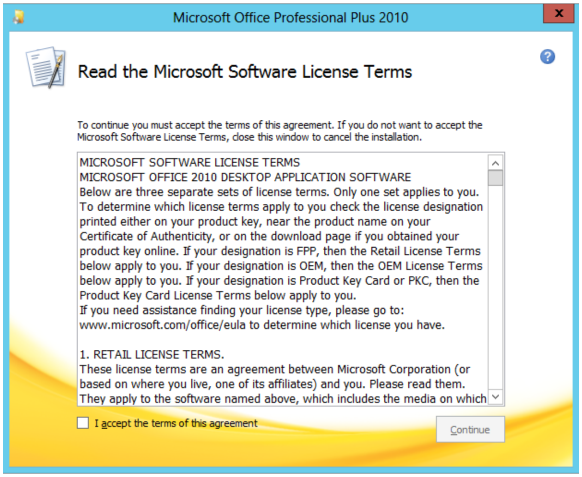
Some programs offer prompts that ask for your username or initials. These are optional but useful. The username will automatically be entered as the Author name in any documents you create with the program. The initials will be used in settings where multiple people edit documents to identify changes you made to the document.

The End User License Agreement

Just about every commercial program and most freeware and open-source programs require that you accept the End User License Agreement (EULA) as part of the installation process. Figure 38.4 shows an example. The agreement is a legal document that defines your rights to the program, as well as the developer's retained rights.

FIGURE 38.4

Sample End User License Agreement



Microsoft Office Professional Plus 2010

Read the Microsoft Software License Terms

To continue you must accept the terms of this agreement. If you do not want to accept the Microsoft Software License Terms, close this window to cancel the installation.

MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT OFFICE 2010 DESKTOP APPLICATION SOFTWARE
Below are three separate sets of license terms. Only one set applies to you. To determine which license terms apply to you check the license designation printed either on your product key, near the product name on your Certificate of Authenticity, or on the download page if you obtained your product key online. If your designation is FPP, then the Retail License Terms below apply to you. If your designation is OEM, then the OEM License Terms below apply to you. If your designation is Product Key Card or PKC, then the Product Key Card License Terms below apply to you.
If you need assistance finding your license type, please go to: www.microsoft.com/office/eula to determine which license you have.

1. RETAIL LICENSE TERMS.
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which

☐ I accept the terms of this agreement

The EULA differs from one program to the next. In most cases, the EULA gives you the right to install a program on one computer. However, that is not always the case. The EULA for Microsoft Office 2010 applications, for example, allows you to install the software on a licensed device (such as your desktop computer) and one portable device (such as your notebook PC). The intent of this clause is that you will use the software on only one computer at a time. What's more, you can access and use the software on the device remotely from any other device. For example, this means you can connect to your office PC from home and run the Office application remotely on your office PC (or vice versa).

Although many people never read the EULA when installing a program, you should take the time to do so. You'll discover interesting bits of information (such as the fact that you can install Office on more than one computer) and also potential problems. For example, we've seen EULAs for shareware and commercial programs that explain that the Setup program will install other, third-party applications along with the program, and that by accepting the EULA you are indicating your acceptance of those other programs. These programs might have nothing to do with the program you are installing, such as weather monitors, Internet Explorer add-ons, toolbars, and so on. Often, the installation program gives you the option of not installing these additional programs, but that's not always the case. So, my best advice is to always read the EULA.

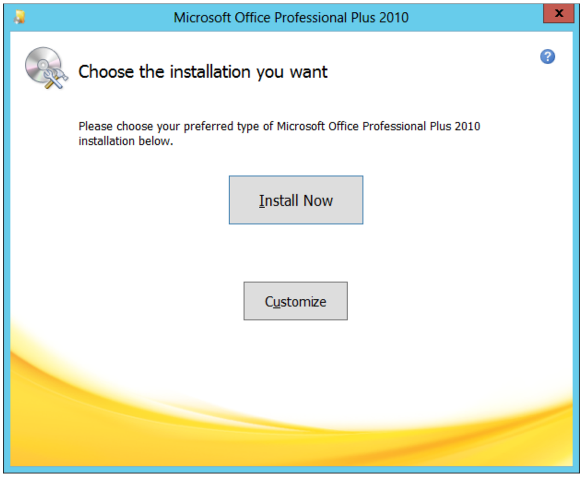
You can't install the program if you don't accept the terms of the agreement, so assuming you are happy with (or at least resigned to) the terms of the EULA, select (check) the I Accept option and click Next, Continue, or whatever button continues the installation process.

Type of installation

Sometimes you'll be given some choices as to how and where you want to install the program. Figure 38.5 shows an example from Microsoft Office Professional 2010. Unless your computer is low on disk space, it's generally a good idea to install the program with all features. Otherwise, months later you may go to use some advanced feature of the program only to get an error message saying it's not installed. A nice compromise in Microsoft Office Setup is to choose the Installed On First Use option for a feature, which causes Setup to run when you try to use a feature that is not yet installed. Then, you just pop in the CD or DVD, let Setup install the feature, and continue working.

FIGURE 38.5

Type of installation



Microsoft Office Professional Plus 2010
Choose the installation you want

Please choose your preferred type of Microsoft Office Professional Plus 2010 installation below.

As to the *where* to install the program, there is rarely any reason to change the suggested location, which is typically some folder in `C:\Program Files`. Don't change that unless you really have some good reason for doing it. Whatever you do, don't make the common newbie mistake of installing it in your Documents folder or someplace like that. You're not installing a document. You're installing a program. And it's best to keep all your programs in subfolders under `C:\Program Files`.

Installation summary

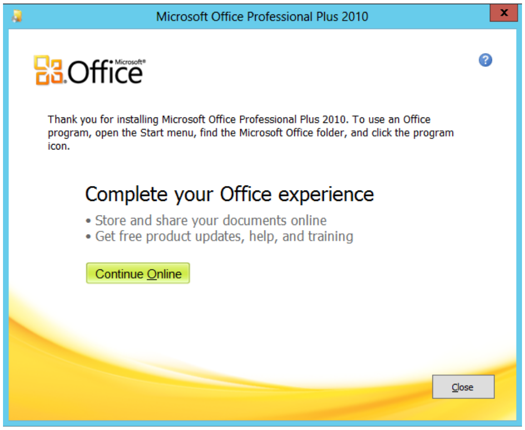
The installation procedure might give you a summary of the options you chose along the way. Typically, you'll have a Back button or some other means to back up and make changes if needed.

Setup completed

The last page of the installation options might offer a couple of final options, as in the example shown in Figure 38.6. Whether you choose these options is relatively unimportant. You can check the web for updates and additional downloads at any time, whether through the program itself or by visiting the software company's website (or the Microsoft Update site).

FIGURE 38.6

Setup complete



Thank you for installing Microsoft Office Professional Plus 2010. To use an Office program, open the Start menu, find the Microsoft Office folder, and click the program icon.

Complete your Office experience

- Store and share your documents online
- Get free product updates, help, and training

Some applications give you the option of keeping installation files on the computer rather than deleting them. Keeping the installation files can make it easier to change program settings or install missing components in the future. They usually don't take up any significant amount of disk space. Click Finish, remove the CD/DVD from the drive, and put it someplace safe in case you ever need to reinstall in the future.

You may also be prompted to shut down and restart Windows after the program is installed. If prompted, you can click Yes to restart now or click No to restart later. In any event, you must restart at least once before running the program for the first time.

NOTE

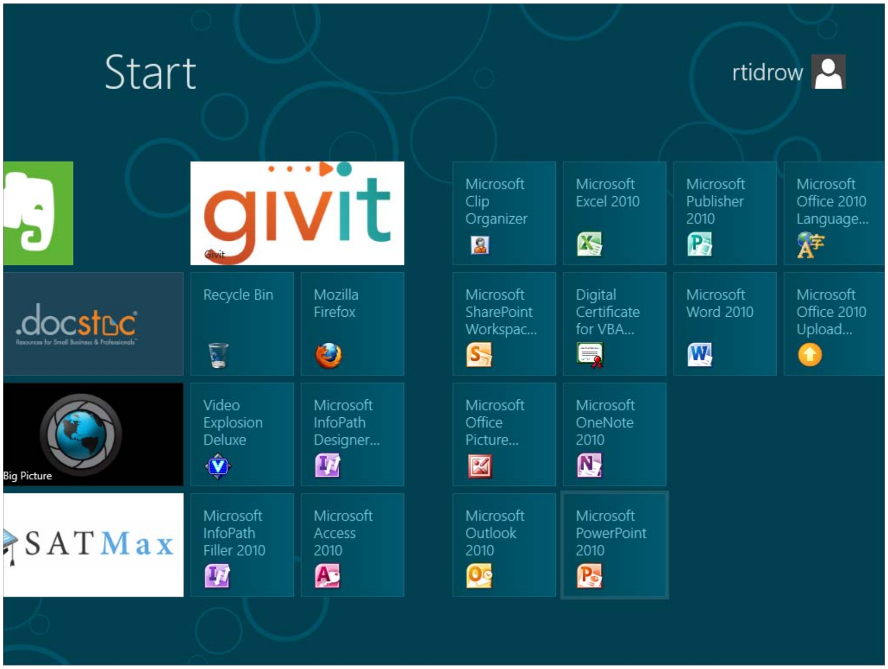
Most insurance policies don't cover computer software. So if at all possible, consider keeping your original program DVD/CDs in a fireproof safe.

Using the installed program

Once the program is installed, you can run it from the Windows 8 Start screen. The preceding steps installed Microsoft Office Professional 2010. So to run it, you'd show the Windows 8 Start screen, scroll over to the application you want to start (such as Microsoft PowerPoint), and click its tile, as shown in Figure 38.7.

FIGURE 38.7

New program on the Start screen


Start
rtidrow
givit
Microsoft Clip Organizer
Microsoft Excel 2010
Microsoft Publisher 2010
Microsoft Office 2010 Language...
.docstoc
Resources for Small Business & Professionals
Recycle Bin
Mozilla Firefox
Microsoft SharePoint Workspac...
Digital Certificate for VBA...
Microsoft Word 2010
Microsoft Office 2010 Upload...
Big Picture
Video Explosion Deluxe
Microsoft InfoPath Designer...
Microsoft Office Picture...
Microsoft OneNote 2010
SATMax
Microsoft InfoPath Filler 2010
Microsoft Access 2010
Microsoft Outlook 2010
Microsoft PowerPoint 2010

Wrap-Up

Installing programs from files, CDs, or DVDs is easy to do. It's basically a matter of running the executable file, or putting the program installation disk into your CD or DVD drive and following the onscreen instructions. Here's a quick summary of the main points presented in this chapter:

- Consider creating a system restore point (see Chapter 31) before installing any program. That way, if the new program creates problems, use that restore point and return to the protection point to undo every change made during the program installation. Note that Windows 8 will create a restore point for you automatically in most situations.

- You need to install a program only once, not each time you want to use it. Once installed, you run the program from the new Windows 8 Start screen, without the program CD or DVD in the drive. In a few cases, the program requires the CD or DVD in the drive to validate that you have a licensed copy of the program (because possession of the CD or DVD implies that you haven't installed by using someone else's media).
- If you're upgrading a program that's already installed, do not remove the existing version unless the installation instructions tell you to do so.
- The typical procedure for installing a new program is to insert the program's installation CD or DVD and follow the onscreen instructions. For a program that you download from the Internet, you simply need to double-click its setup filename.
- If nothing happens within a minute of inserting the installation disc, open your Computer folder, open the icon for the CD drive, and double-click the Setup or Setup.exe icon on the CD.
- When the installation is complete, store the installation disc in a safe place. In most cases you won't need it to run the program. But you may need it to reinstall the program should some mishap cause you to lose the program.

CHAPTER 39

Getting Older Programs to Run

IN THIS CHAPTER

- Recognizing old programs to avoid
- Installing incompatible programs
- Using the Program Compatibility Wizard
- Checking for compatibility
- Using DOS commands in Windows 8

You can run almost any program that's installed on your computer just by clicking its tile on the new Windows 8 Start screen. But there are always exceptions to the rule. Chief among the list of exceptions are old programs that were originally written to work with earlier versions of Windows. Or, even worse, programs that were written to run on DOS.

That's not to say Windows *can't* run old programs. Most of the time, it can run an older program as-is, without any changes at all on your part. This is especially true if the program was written for Windows XP or later versions of Windows. So, before you assume that you have to do something to try to get an older program to run, try running the program normally. If it runs, you're done. If it won't run, then this is the chapter you need to (hopefully) get the program to run.

Understanding Program Types

A couple types of programs could be considered old in the context of this chapter:

- **DOS programs:** These programs were developed to run under various versions of the Disk Operating System (DOS) that was the precursor to Windows.
- **16-bit Windows programs:** These Windows applications were written for Windows 98 and earlier versions of Windows.

What does "16-bit" mean? Three classes of Windows applications exist: 16-bit, 32-bit, and 64-bit. The number of bits indicates the maximum amount of addressable memory supported by the program. Table 39.1 indicates the differences.

TABLE 39.1 **Processor Technology and Directly Addressable Memory**

Technology	Meaning	Memory Addresses
16-bit	2^{16}	65,536
32-bit	2^{32}	4,294,967,296
64-bit	2^{64}	18,446,744,073,709,600,000

Windows NT, Windows 2000, and Windows XP were all originally 32-bit operating systems. Windows XP was also offered in a 64-bit edition. Windows 98 and earlier were 16-bit operating systems. Windows Vista and Windows 7 were offered in two versions, 32-bit and 64-bit. Likewise, Windows 8 is available in 32-bit and 64-bit versions. Suffice it to say, the higher the bits, the more capable the operating system. For the purposes of this chapter, the key point is that you can run a program on the OS it was designed for or (possibly) on a later version, but you can't go backwards. For example, you can run a 32-bit application on a 64-bit OS, but you can't run a 64-bit program on a 32-bit OS.

DOS programs

Let's make a distinction between DOS programs and DOS commands that you can run in Windows 8. Consider "DOS programs" to refer to programs that were written specifically to run on a DOS operating system without (and prior to) Windows. It's so unlikely that you would want to run an old DOS program on Windows 8 that we don't even cover the topic in this chapter (although we do have a copy of Zork lying around somewhere that would be fun to play again . . .). That doesn't mean you *can't* run that DOS program under Windows 8 because many of them will run without any major problems.

DOS commands are developed by Microsoft and included as part of the Windows package, rather than being developed and marketed by third parties. We do cover DOS commands to some degree later in this chapter.

Old programs to avoid altogether

Windows 8 is a revision of the Windows 7 operating system, so almost all Windows 7 programs should have no problems running on Windows 8. Likewise, many of your basic Windows Vista and Windows XP application programs will work. But you should validate compatibility for other kinds of programs before attempting to run them under Windows 8. These include:

- **Old disk utility programs:** Older disk utility programs such as Norton Utilities (later it went by Symantec Norton Utilities) and various disk compression and partitioning tools should never be run on Windows 8. Many older DVD- or

CD-burning programs are likely to cause problems, too. If you have such a program, you should really upgrade to the Windows 8 version of that program or find a similar product that's designed to work with Windows 8.

- **Old backup programs:** If you have an older backup program, using it in compatibility mode could prove disastrous. Even if you're able to perform the backup, there's an outside chance you won't be able to restore from the backup if and when you need to. Consider using Windows File History, which comes with your copy of Windows 8.
- **Old cleanup programs:** Older programs that purport to keep your computer running in tip-top shape, clean up your registry, and so forth should not be used at all in Windows 8. If you like the program, look into getting a version that's specifically written for or certified by the developer as compatible with Windows 8.
- **Old optimizing programs:** Programs designed to make your computer run at maximum performance won't necessarily make Windows 8 run that way. In fact, they may do a lot more harm than good. If you use such programs, check to see if there's a Windows 8 version available before you install the old version.
- **Old antivirus programs:** Virus detection and removal is dicey business, and needs to be handled with great care. Antivirus programs written for pre-Windows 8 versions of Windows should *never* be installed or run on a Windows 8 computer unless certified by the developer as compatible. The same goes for anti-spyware and other anti-malware programs. Better to seek out a Windows 8 version of the program than to presume the older version will work. Better yet, use Windows Defender, which comes pre-installed on your computer. Read Chapter 8 on how to deal with malicious software that attacks your computer.

Installing Incompatible Programs

To install an older program, first try installing it normally. For example, if it's on a CD, insert the CD and wait for the installation program to appear automatically. If nothing starts automatically, open your Computer folder (open File Explorer and choose Computer). Then click the icon to open the drive that contains the installation disk and double-click the setup launcher program (typically setup.exe, setup, install.exe, or install). If Windows 8 determines that the program is older, you'll see the Program Compatibility Assistant.

If you believe that the program installed normally, just click the option that indicates that the program installed properly. Otherwise, click the option that specifies compatibility mode. Windows 8 assigns some compatibility mode attributes to the program and tries the installation again. With any luck, the second try will do the trick.

If you still have problems, here are some things to consider:

- If you're installing from a standard user account, log out and log in to an administrative account; then try to install from that account.
- If you have to create any file or folder names, use old 8.3 conventions (keep filenames to eight characters maximum with no blank spaces).
- If you get stuck in an installation program, use the Applications tab in Task Manager to end the stuck program. See Chapter 42 for details on Task Manager.

If all else fails, contact the program publisher (if it's still in business) or look for information about that program online. Only the program publisher really knows if the program will even run in Windows 8 and what's required to get it to run.

Using the Program Compatibility Wizard

Installing a program is one thing; getting it to run after it's installed is another. If an installed program won't start or isn't working right, try using the Program Compatibility Wizard on it.

The Program Compatibility Wizard provides a step-by-step means of configuring and testing an older program so that it will run in Windows 8. Before you bother to use it, try running the installed program without it. You could discover that the program runs just fine without any compatibility settings and save yourself quite a bit of trouble.

If you're sure an installed program isn't running, or is not running correctly, follow these steps to start the Program Compatibility Wizard:

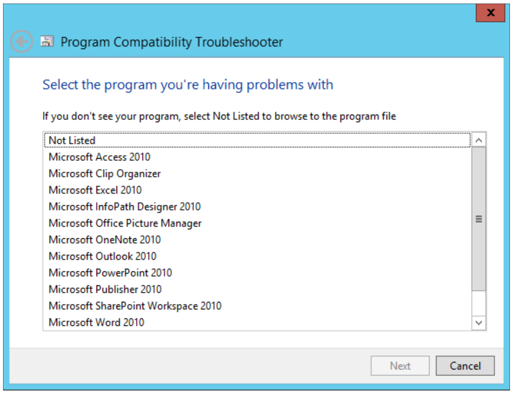
TIP

You can right-click a program's icon on the Start screen, choose File Location, right-click the file, and then choose Troubleshoot Compatibility to launch the Program Compatibility Wizard.

1. On the desktop, press Windows+X and click Control Panel. Click the Programs category and then click Run Programs Made For Previous Versions Of Windows to launch the Program Compatibility Wizard.
2. Read the first wizard page and click Next.
3. On the second wizard page, choose the program for which you want to modify compatibility settings (see Figure 39.1). Then, click Next.

FIGURE 39.1

Program Compatibility Troubleshooter



Select the program you're having problems with

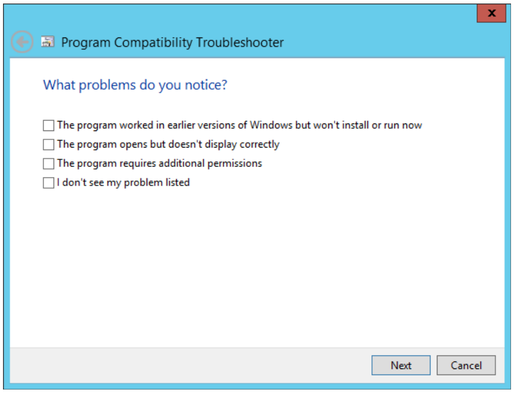
If you don't see your program, select Not Listed to browse to the program file

Not Listed
Microsoft Access 2010
Microsoft Clip Organizer
Microsoft Excel 2010
Microsoft InfoPath Designer 2010
Microsoft Office Picture Manager
Microsoft OneNote 2010
Microsoft Outlook 2010
Microsoft PowerPoint 2010
Microsoft Publisher 2010
Microsoft SharePoint Workspace 2010
Microsoft Word 2010

4. If you want Windows 8 to try to determine the right settings on its own, click Try Recommended Settings. To specify your own settings, click Troubleshoot Program. The following steps assume you have selected the second option.
5. Next, the wizard next prompts you to answer questions about the program (see Figure 39.2). Selecting any of the first three causes the wizard to prompt you with related questions. For example, if you choose the option The Program Worked In Earlier Versions of Windows But Won't Install Or Run Now, the wizard asks you to specify on which version of the OS it worked previously. Likewise, choosing the option The Program Opens But Doesn't Display Correctly results in a list of questions similar to that shown in Figure 39.3.
6. Complete the wizard by selecting options that relate to the problems you are having with the program.

FIGURE 39.2

Program Compatibility questions

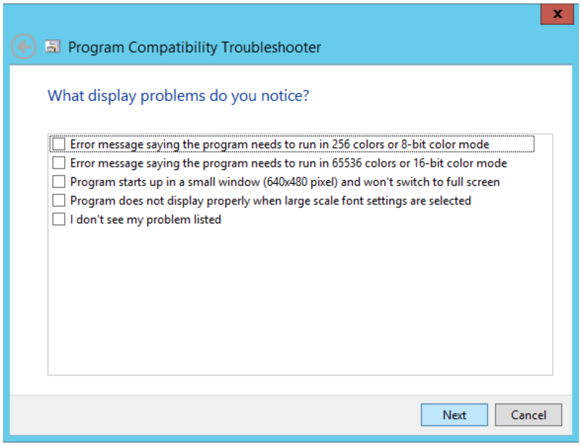


What problems do you notice?

☐ The program worked in earlier versions of Windows but won't install or run now
☐ The program opens but doesn't display correctly
☐ The program requires additional permissions
☐ I don't see my problem listed

FIGURE 39.3

Display options for compatibility



What display problems do you notice?

☐ Error message saying the program needs to run in 256 colors or 8-bit color mode
☐ Error message saying the program needs to run in 65536 colors or 16-bit color mode
☐ Program starts up in a small window (640x480 pixel) and won't switch to full screen
☐ Program does not display properly when large scale font settings are selected
☐ I don't see my problem listed

The process is mostly trial and error. If the program runs when you finish the wizard, great. Otherwise you can run it again to try some different settings until you can get the program to work right.

Here are some general guidelines to help you get your programs running:

- If the program won't install or won't run, run the wizard, choose the option The Program Worked In Earlier Versions Of Windows But Won't Install Or Run Now and specify the operating system for which the program was written. For example, if it is a Windows XP game, choose that OS from the OS list provided by the wizard.
- If you have problems with the program's display, choose the option The Program Opens But Doesn't Display Correctly and click Next. Choose the symptoms the program is exhibiting and click Next to let the wizard set display options as needed.
- If you think the program is having permissions issues (for example, the program says it can't write a file), choose the option The Program Requires Additional Permissions. The wizard configures the program to run as an administrator, which should resolve the issue.

There's no guarantee that the Program Compatibility Wizard will make the program run. Some programs are so old and so far removed from modern computing capabilities that there's just no way to force them to run. In those cases, the only hope is to contact the program publisher or search online to see if they have any solutions or a compatible version of the program.

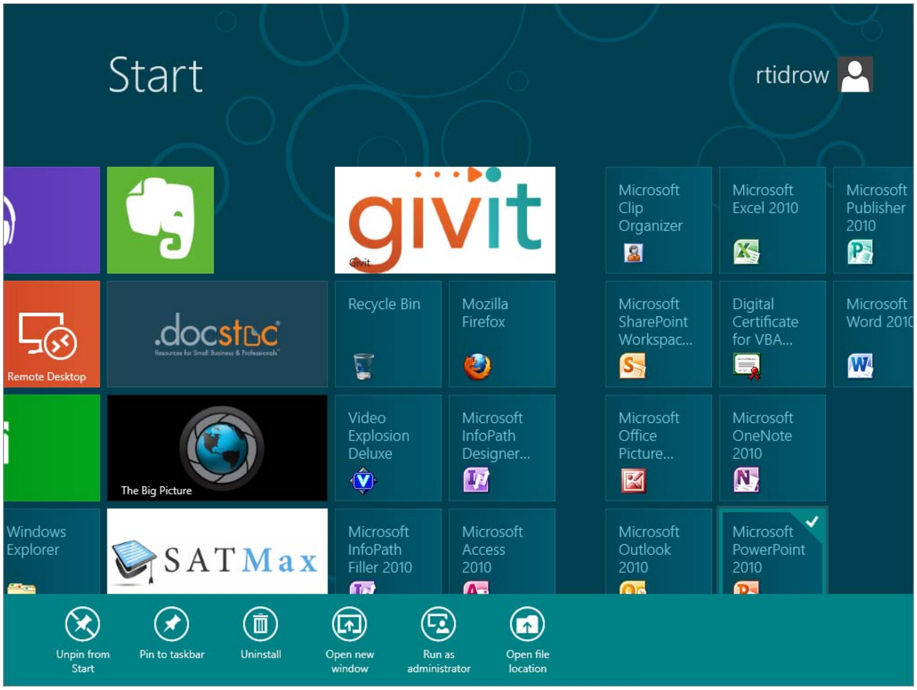
Quick-and-Dirty Program Compatibility

The Program Compatibility Wizard provides an easy way to choose and test settings for program compatibility. Those settings are stored on the Compatibility tab of the program file's Properties sheet. You can use the wizard to change compatibility settings, or you change settings manually right in the Properties sheet by following these steps:

1. On the Start screen, right-click the program you want to examine. Choose Open File Location at the bottom of the screen (see Figure 39.4).

FIGURE 39.4

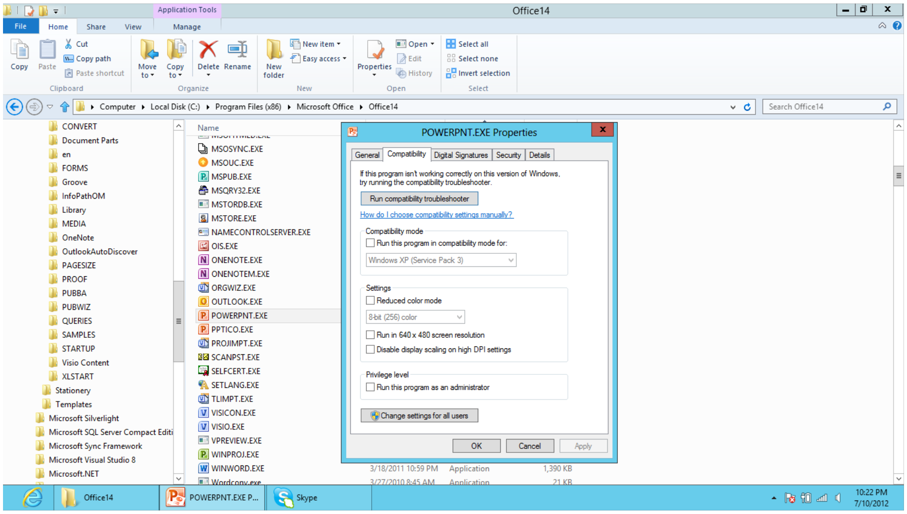
Display program options


Start
rtidrow
givit
Givit
Microsoft Clip Organizer
Microsoft Excel 2010
Microsoft Publisher 2010
Remote Desktop
.docstoc
Recycle Bin
Mozilla Firefox
Microsoft SharePoint Workspac...
Digital Certificate for VBA...
Microsoft Word 2010
The Big Picture
Video Explosion Deluxe
Microsoft InfoPath Designer...
Microsoft Office Picture...
Microsoft OneNote 2010
Windows Explorer
SATMax
Microsoft InfoPath Filler 2010
Microsoft Access 2010
Microsoft Outlook 2010
Microsoft PowerPoint 2010
Unpin from Start
Pin to taskbar
Uninstall
Open new window
Run as administrator
Open file location

2. Right-click the program's icon and choose Properties.
3. In the Properties dialog box that opens, click the Compatibility tab. You'll see the options shown in Figure 39.5.

FIGURE 39.5

Compatibility settings


Application Tools
Office14
File
Home
Share
View
Manage
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Computer ▸ Local Disk (C:) ▸ Program Files (x86) ▸ Microsoft Office ▸ Office14
Search Office14
CONVERT
Document Parts
en
FORMS
Groove
InfoPathOM
Library
MEDIA
OneNote
OutlookAutoDiscover
PAGESIZE
PROOF
PUBBA
PUBWIZ
QUERIES
SAMPLES
STARTUP
Visio Content
XLSTART
Stationery
Templates
Microsoft Silverlight
Microsoft SQL Server Compact Editi
Microsoft Sync Framework
Microsoft Visual Studio 8
Microsoft.NET
Name
MSOSYNC.EXE
MSOUC.EXE
MSPUB.EXE
MSQRY32.EXE
MSTORDB.EXE
MSTORE.EXE
NAMECONTROLSERVER.EXE
OIS.EXE
ONENOTE.EXE
ONENOTEM.EXE
ORGWIZ.EXE
OUTLOOK.EXE
POWERPNT.EXE
PPTICO.EXE
PROJIMPT.EXE
SCANPST.EXE
SELFCERT.EXE
SETLANG.EXE
TLIMPT.EXE
VISICON.EXE
VISIO.EXE
VPREVIEW.EXE
WINPROJ.EXE
WINWORD.EXE
Wordconv.exe
3/18/2011 10:59 PM
Application
1,390 KB
3/27/2010 8:45 AM
Application
21 KB
POWERPNT.EXE Properties
General
Compatibility
Digital Signatures
Security
Details
Run compatibility troubleshooter
How do I choose compatibility settings manually?
Change settings for all users
OK
Cancel
Apply
Office14
POWERPNT.EXE P...
Skype
10:22 PM
7/10/2012

If this program isn't working correctly on this version of Windows, try running the compatibility troubleshooter.

Compatibility mode

☐ Run this program in compatibility mode for:

Windows XP (Service Pack 3)

Settings

☐ Reduced color mode

8-bit (256) color

☐ Run in 640 x 480 screen resolution

☐ Disable display scaling on high DPI settings

Privilege level

☐ Run this program as an administrator

4. Choose Run This Program In Compatibility Mode For: and then choose the operating system for which the program was written. If the program installs and runs, but exhibits other symptoms (such as display problems), leave this option unselected.
5. If you are having problems with the program's display, choose appropriate display settings in the Settings group.
6. If the program seems to have permission problems, select Run This Program As An Administrator.
7. If you want to apply the settings for everyone who uses the program, click the Change Settings For All Users button to open a similar Properties dialog box and set properties there as needed.
8. Click OK.

The compatibility settings stick to the program so you can just start the program normally, from the All Programs menu, at any time. Just keep in mind there's no guarantee that you'll be able to force all programs to run in Windows 8.

Using DOS Commands in Windows 8

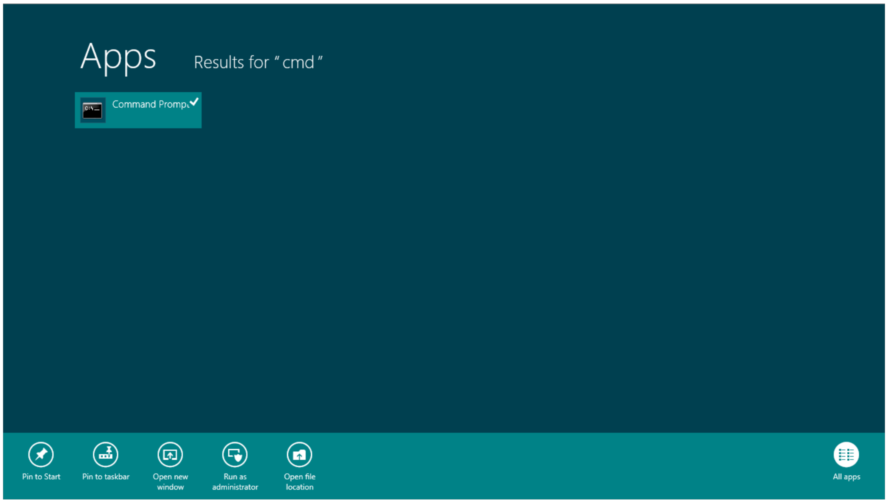
Readers who have used personal computers since the DOS days might still wish to enter the occasional DOS command. DOS commands will let you do things you can't really do in Windows. For example, in those rare instances where you can't delete a file in Windows, using a DOS `erase` or `del` command with the `/F` switch will often do the trick. You can use the DOS `dir` command to print filenames from a folder to paper or a text file.

There is one big catch to using commands in Windows 8. User Account Control (UAC) may prevent you from doing things you'd otherwise take for granted. You can get around many of those by using the Run As Administrator option to open the command prompt. Here are two different ways to open the Command Prompt window:

- From the desktop, press Windows+X and click Command Prompt.
- Display the Charms Bar, click Search, and type **cmd**. Choose cmd.exe or right-click cmd.exe and choose Run As Administrator (see Figure 39.6).

FIGURE 39.6

Open Command Prompt



The Command Prompt window that opens is much like DOS. By default, you're taken to the home directory for your user account. But you can navigate around using the DOS `cd` command. For example, enter **`cd..`** to go to the parent directory, or **`cd "program files"`** to go to the Program Files folders.

To see a list of all supported commands, enter `help` at the command prompt. For the syntax of a command, type the command followed by `/?`. For example, entering `dir /?` displays the help for the `dir` command.

NOTE

You can change the height and width of the Command Prompt window. To do so, click its control menu in the upper-left corner and choose Properties.

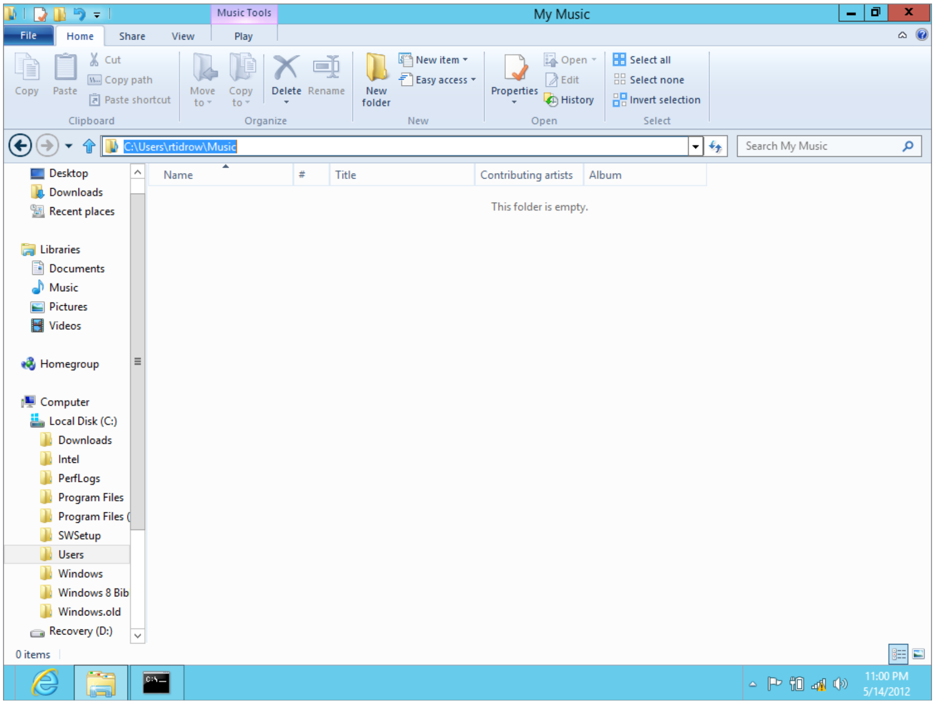
You can copy-and-paste a lengthy pathname to a `cd` command to simplify opening that folder in a DOS window. In Windows, open the folder in File Explorer, highlight the path in the address bar as in Figure 39.7, and press Ctrl+C to copy it.

TIP

To see the name you need to type to launch any program, right-click the program's icon on the All Programs menu and choose Properties. The filename at the end of the Target path is the name you type in the Search or Run box.

FIGURE 39.7

Select a directory path


Music Tools
My Music
File
Home
Share
View
Play
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
C:\Users\rtidrow\Music
Search My Music
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Downloads
Intel
PerfLogs
Program Files
Program Files (
SWSetup
Users
Windows
Windows 8 Bib
Windows.old
Recovery (D:)
Name
#
Title
Contributing artists
Album
This folder is empty.
0 items
11:00 PM
5/14/2012

In the Command Prompt window, type **`cd`** and a space. Then right-click the Command Prompt window and choose Paste. Press Enter, and you'll be in that folder.

Use the `dir` command with various switches to view, or optionally print, all the filenames in a folder and also its subfolders if you like. For example, let's say you navigate to the Music folder for your account (`C:\Users\yourUserName\Music`). From that folder, entering `dir /s` lists all file and folder names for all artists, albums, and songs in your Music folder.

You can use the `/b`, `/n/`, and `/w` switches to choose how you want the information displayed. For example, entering `dir /s /w.` shows filenames in the wide format.

To send `dir` output directly to the printer, try `dir /s /w > prn`. You're probably better off sending the output to a text file rather than straight to the printer. That way you can open and edit the text file before you print or even import it into Excel or Access to make it more like tabular data. To send output to a file, end the command with a filename (or path and filename). For example, entering

```
dir /s /w >MyMusic.txt
```

from the Music folder puts the output listing in a file named `MyMusic.txt` in the Music folder. You can then open that file with any text editor or word processor to clean it up. If you have database management skills, you can import the data to Access or a similar program and treat it like any other tabular data.

CAUTION

This section is just a side topic for people who are already familiar with DOS. Don't experiment with DOS commands carelessly. You could lose a lot of files and have no means of getting them back!

To exit the Command Prompt window, enter the `exit` command or just close its window.

Wrap-Up

This chapter has focused on techniques for getting older programs to work in Windows 8. Windows 8 offers several tools to help with compatibility issues. Whether or not you have any luck with them depends on how old and how incompatible the program is. Most of your programs will run fine under Windows 8 with Compatibility Mode or Windows XP Mode. A few won't, until you upgrade to the Windows 8 version, but those should be few and far between. The main points are as follows:

- Most programs written for Windows Vista and Windows 7 are already compatible with Windows 8 and require no special handling.
- When you attempt to install an older program, the Program Compatibility Assistant kicks in automatically to help out.
- The Program Compatibility Wizard helps you with installed programs that won't start or run correctly.
- Compatibility settings are stored in the program file's Properties sheet on the Compatibility tab.
- To use DOS commands in Windows 8 with minimal flack from UAC, choose Run As Administrator to open the Command Prompt window.

CHAPTER

40

Repairing and Removing Programs

IN THIS CHAPTER

Installing missing program features

Repairing damaged programs

Removing programs you don't want

Most of the time, your applications will operate smoothly and without incident. Occasionally, however, you might need to repair a program that is having problems. Or, you might want to remove a program or a Windows feature that you are not using.

In this chapter, you learn techniques for managing installed programs. You learn how to change or repair programs, as well as how to remove programs you no longer need or want. You'll do most of these tasks in Control Panel's Programs and Features applet or from the Windows Start screen.

Changing and Repairing Programs

Some large programs let you choose how you want to install the program. For example, you may be given options to do a Minimum Install, Typical Install, or Complete Install. You might do a Minimum or Typical installation to conserve disk space but later discover you need a feature that only the Complete install would have provided.

Sometimes a program might become *corrupted* and not work properly anymore. That can happen when you inadvertently delete a file that the program needed. Or it might be caused by some minor glitch that compromised a file that the program uses.

The first step to changing or repairing a program is to get to the Programs And Features applet in Control Panel. Here's how:

1. Press Windows+X on the desktop and click Control Panel.
2. In the category view, click Programs.
3. Click Programs and Features.

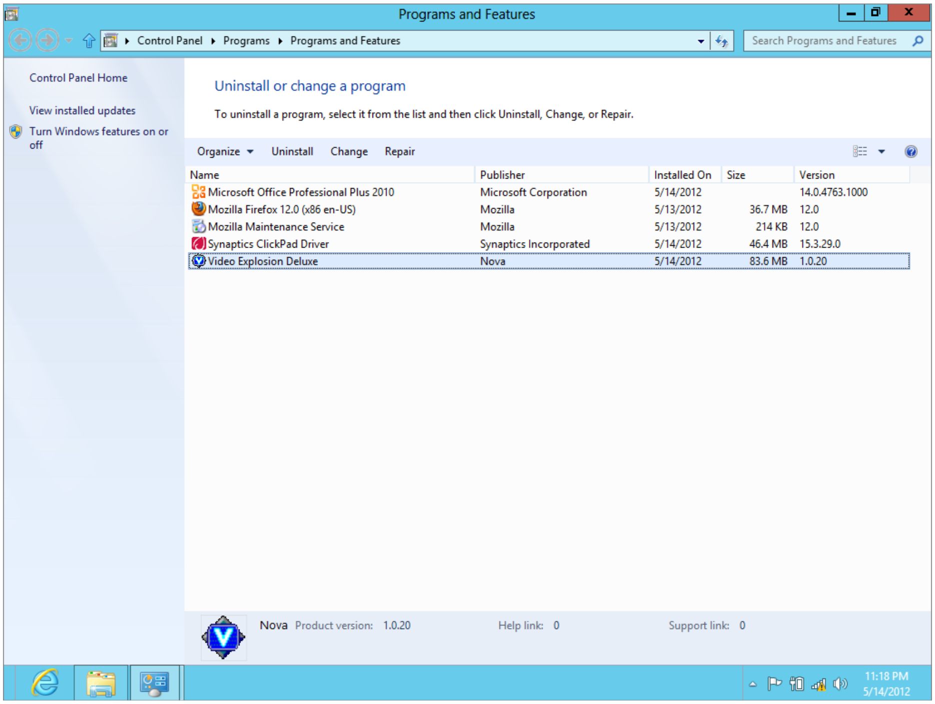
You can also get to Programs and Features from the Search screen. Simply start typing fea, or display the Charms Bar and choose Search. Type **fea,** click Settings, and choose Programs And Features from the Settings screen.

The page that opens lists all of your installed application programs. (It doesn't include programs that come with Windows 8.)

Not all programs offer change or repair options. To see what options an installed program offers, right-click the program name. Or, click the program name and take a look at the buttons above the list of program names. Things you can do with that program will be listed in a toolbar above the list. For example, in Figure 40.1, we clicked Video Explosion Deluxe, which offers options to Uninstall, Change, and Repair.

FIGURE 40.1

List of installed programs


Programs and Features
Control Panel
Programs
Programs and Features
Search Programs and Features
Control Panel Home
View installed updates
Turn Windows features on or off
Organize
Uninstall
Change
Repair
11:18 PM
5/14/2012

Uninstall or change a program

To uninstall a program, select it from the list and then click Uninstall, Change, or Repair.

Name	Publisher	Installed On	Size	Version
Microsoft Office Professional Plus 2010	Microsoft Corporation	5/14/2012		14.0.4763.1000
Mozilla Firefox 12.0 (x86 en-US)	Mozilla	5/13/2012	36.7 MB	12.0
Mozilla Maintenance Service	Mozilla	5/13/2012	214 KB	12.0
Synaptics ClickPad Driver	Synaptics Incorporated	5/14/2012	46.4 MB	15.3.29.0
Video Explosion Deluxe	Nova	5/14/2012	83.6 MB	1.0.20

Nova Product version: 1.0.20 Help link: 0 Support link: 0

In most cases, you'll need the CD or DVD that you originally used to install the program to change or repair the program. If you have the CD handy, go ahead and put it in the CD drive. If Windows asks what you want to do with the disk, choose Take No Action. If the installation program opens automatically, just cancel or close that program.

NOTE

Changes you make to a program affect all users. Therefore, you must know the password for an Administrator account on your computer to change or repair programs.

Exactly how things play out from here will vary from one program to the next, so we can only provide some general guidelines and examples. But all you really have to do is make your selections and follow the instructions on the screen. For example, to repair a corrupted program, click the Repair button and do whatever the resulting instructions tell you to do.

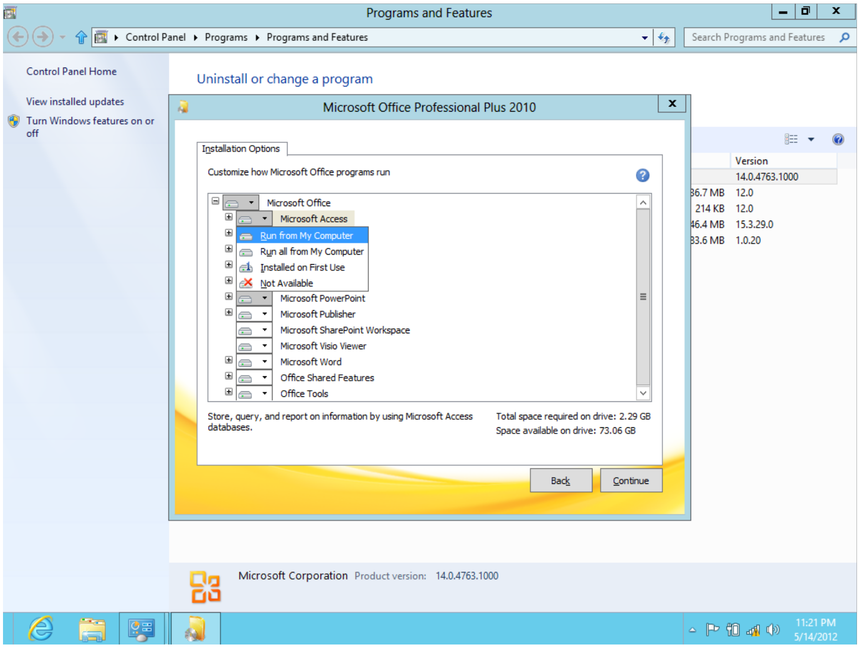
The Change option for a program is generally for adding components you didn't install the first time around, although you can also remove any components you don't need. The exact process will vary from one program to the next, but a typical approach is to list all program features in a hierarchical tree, like the example in Figure 40.2.

NOTE

Don't use Programs And Features to change settings within a program. Instead, use the program's Options or Preferences dialog box. Open the program as you normally would and look through its menus for a Tools or Preferences option. Or search that program's help for the word **preferences** or **options**.

FIGURE 40.2

Click an optional component


Programs and Features
Control Panel ▸ Programs ▸ Programs and Features
Search Programs and Features
Control Panel Home
View installed updates
Turn Windows features on or off
Uninstall or change a program
Microsoft Office Professional Plus 2010
Installation Options
Customize how Microsoft Office programs run
Microsoft Office
Microsoft Access
Run from My Computer
Run all from My Computer
Installed on First Use
Not Available
Microsoft PowerPoint
Microsoft Publisher
Microsoft SharePoint Workspace
Microsoft Visio Viewer
Microsoft Word
Office Shared Features
Office Tools
Back
Continue
Version
14.0.4763.1000
36.7 MB 12.0
214 KB 12.0
46.4 MB 15.3.29.0
33.6 MB 1.0.20
11:21 PM
5/14/2012

Store, query, and report on information by using Microsoft Access databases.

Total space required on drive: 2.29 GB
Space available on drive: 73.06 GB

Microsoft Corporation Product version: 14.0.4763.1000

In the tree, click a program feature to choose an action. For example, choose Run From My Computer to install a feature. To remove an optional feature, choose Not Available. That feature will be removed and its icon will display a red X. When you're finished making your selections, click OK or Next and follow the onscreen instructions.

Uninstalling Programs

Unlike documents and other files, copying a program to your hard disk isn't enough to make it usable. You have to *install* programs before you can use them. Likewise, simply deleting the startup icon for a program isn't enough to remove the program from your system. You have to *uninstall* the program. These steps are necessary because a program often consists of many files. For example, Microsoft Office comprises hundreds of files! Furthermore, installing a program makes other changes to the system. Uninstalling is necessary to undo those changes.

NOTE

You must be logged in to an administrative account, or know the administrator password for your PC, to remove a program.

Before you remove (uninstall) any program, make sure you know what you're removing and why. Just because you don't know what a program is or what purpose it serves doesn't mean you should remove it. Removing programs isn't likely to solve any computer problems

CAUTION

There is no Undo or Recycle Bin for reinstating removed programs. The only way to get a removed program back is to reinstall it from its original installation CD or DVD, or to download it again from the original website.

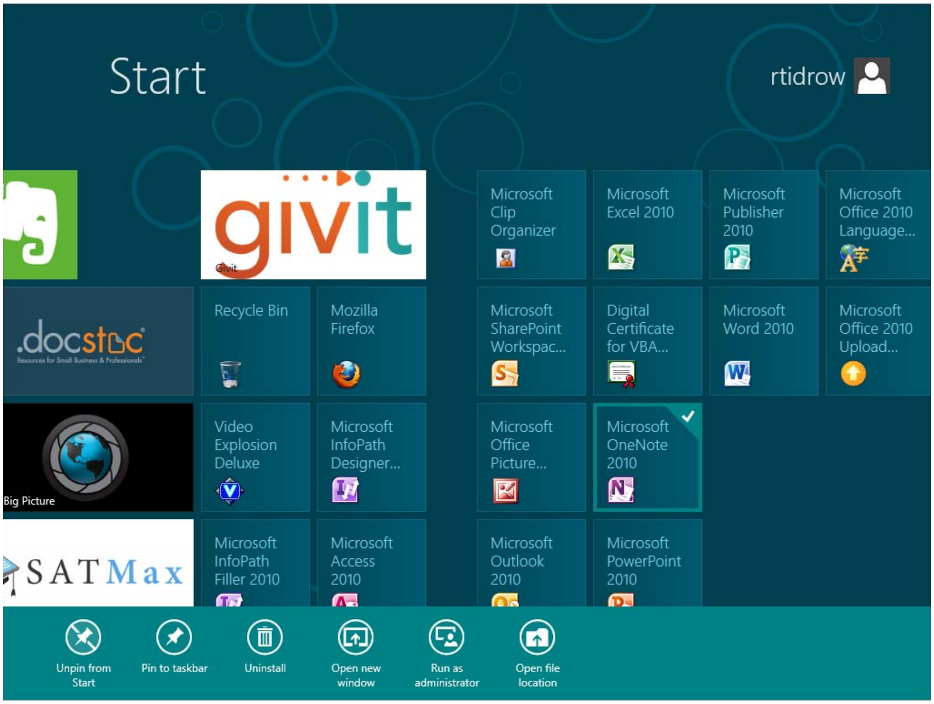
With all those cautions out of the way, removing a program is quite simple. Windows 8 provides two methods for uninstalling programs. From the Start screen, right-click a program icon and choose Uninstall. Or, you can use the Programs And Features Control Panel applet. Assuming you're already in the applet, right-click the name of the program you want to remove and choose Uninstall. Or, select that program's icon or name and click the Uninstall button in the toolbar. If prompted, enter an administrative password. Follow any additional instructions that appear on the screen.

Unpinning from the Start screen

If you don't find a program that you want to remove in Programs And Features, you might still be able to remove its icon from the Start screen. When a program is on the Start screen, it is pinned to the screen. To unpin it, right-click the icon you want to remove and click Unpin From Start, like the example in Figure 40.3. If you find such an option, you can click it to remove the program from your system.

FIGURE 40.3

Unpinning from the Start screen


Start
rtidrow
givit
Givit
Microsoft Clip Organizer
Microsoft Excel 2010
Microsoft Publisher 2010
Microsoft Office 2010 Language...
docstoc
Recycle Bin
Mozilla Firefox
Microsoft SharePoint Workspac...
Digital Certificate for VBA...
Microsoft Word 2010
Microsoft Office 2010 Upload...
Big Picture
Video Explosion Deluxe
Microsoft InfoPath Designer...
Microsoft Office Picture...
Microsoft OneNote 2010
SATMax
Microsoft InfoPath Filler 2010
Microsoft Access 2010
Microsoft Outlook 2010
Microsoft PowerPoint 2010
Unpin from Start
Pin to taskbar
Uninstall
Open new window
Run as administrator
Open file location

Dealing with stuck programs

Occasionally, you might come across a situation where removing a program generates an error message before the program is completely removed. The first thing to do, of course, is to read the error message and see what options it offers. You may be able to finish the removal just by choosing options that the error message provides.

If you can't get rid of a program through the normal means or error message, your next best bet is to install the program again. That might seem counterproductive, but the problem might be that the program only partially installed in the first place. A partially installed program may not have enough stuff installed to do a thorough removal. Once you've completed the initial installation, you should be able to remove the program without any problems.

Turning Windows Features On and Off

Windows 8 comes with many programs and features built right in. How many depends on which edition of Windows 8 you purchased. Regardless of the edition you bought, there may be some features you want to use and some you don't.

TIP

Unlike Add/Remove Windows Programs in Windows XP, program features in Windows Vista, Windows 7, and Windows 8 allow you to turn features on and off without the hassles of installing and uninstalling

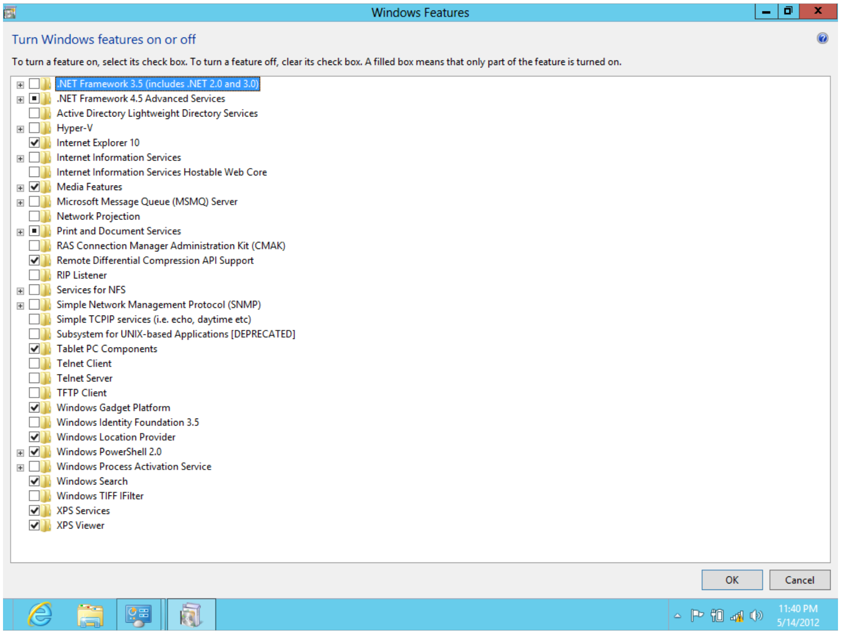
To turn Windows Features on or off, open the Programs And Features Control Panel applet discussed earlier in this chapter. Then click Turn Windows Features On Or Off in the left pane. A list of available Windows Features opens, as in Figure 40.4. Items that are selected are currently installed and working. Unselected features are not active. A filled check box represents a feature that's active but that also has additional subfeatures. Click the + sign next to a feature to see what subfeatures it offers.

CAUTION

Turn off only those program features that you are certain you don't need. If you don't know what a feature is or does, better to err in favor of keeping it active than to find out, the hard way, that you shouldn't have disabled it!

FIGURE 40.4

Windows features



Turn Windows features on or off

To turn a feature on, select its check box. To turn a feature off, clear its check box. A filled box means that only part of the feature is turned on.

- ☐ .NET Framework 3.5 (includes .NET 2.0 and 3.0)
- ■ .NET Framework 4.5 Advanced Services
- ☐ Active Directory Lightweight Directory Services
- ☐ Hyper-V
- ☑ Internet Explorer 10
- ☐ Internet Information Services
- ☐ Internet Information Services Hostable Web Core
- ☑ Media Features
- ☐ Microsoft Message Queue (MSMQ) Server
- ☐ Network Projection
- ■ Print and Document Services
- ☐ RAS Connection Manager Administration Kit (CMAK)
- ☑ Remote Differential Compression API Support
- ☐ RIP Listener
- ☐ Services for NFS
- ☐ Simple Network Management Protocol (SNMP)
- ☐ Simple TCPIP services (i.e. echo, daytime etc)
- ☐ Subsystem for UNIX-based Applications [DEPRECATED]
- ☑ Tablet PC Components
- ☐ Telnet Client
- ☐ Telnet Server
- ☐ TFTP Client
- ☑ Windows Gadget Platform
- ☐ Windows Identity Foundation 3.5
- ☑ Windows Location Provider
- ☑ Windows PowerShell 2.0
- ☐ Windows Process Activation Service
- ☑ Windows Search
- ☐ Windows TIFF IFilter
- ☑ XPS Services
- ☑ XPS Viewer

The rest is easy. To disable a feature or subfeature, clear its check box. To enable a disabled feature, click its empty check box to select it. Click OK after making your changes.

Wrap-Up

Managing installed programs in Windows 8 is easy enough. It all takes place through the Programs And Features page. Here's a quick review of what's involved:

- You need administrative privileges to change, repair, or remove programs.
- Use Programs And Features to change, repair, or remove installed programs (open Control Panel ➪ Programs ➪ Programs And Features).
- To see what options an installed program offers, click its name in Programs And Features and look at the buttons in the toolbar.
- Repairing a program generally involves reinstalling it from the original CD.
- Changing a program refers to installing features you didn't choose initially or removing features you don't use.
- Uninstalling a program removes it from your computer and from all user accounts.
- The Programs And Features window also provides an option to turn Windows features on and off.

CHAPTER 41

Setting Default Programs

IN THIS CHAPTER

- **Setting default programs for documents**
- **Setting defaults for your user account**
- **Setting default actions for disks and devices**
- **Setting defaults for all users**

As everyone knows, there are many different brands of toothpaste, shampoo, cars, and just about every other kind of product you can buy. The same is true of software. Everyone uses a web browser to browse the Internet, and you have many different brands of web browsers to choose from. There's Internet Explorer, which comes with Windows 8. There's also Safari, Firefox, and Google Chrome, to name a few.

For media players, Windows 8 comes with Media Player, Media Center, or both depending on which edition of Windows 8 you have. In addition to those, there's QuickTime, Musicmatch, and many others. When you have two or more programs capable of handling the same type of document, you might want to make one the *default program* that opens automatically when you open a document. Setting such defaults is what this chapter is all about.

Setting Default Programs for Files

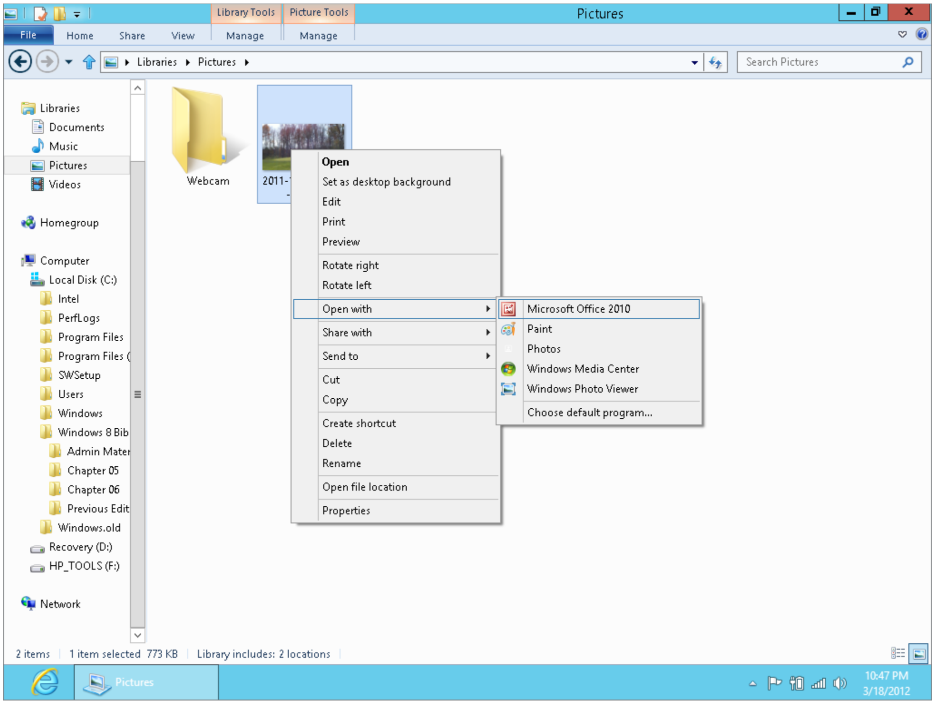
Typed text, pictures, music files, and video clips are all examples of documents and other types of files that you can create or download to your computer. There are thousands of different file types. Each type is indicated by its filename extension. For example, a picture might be a JPEG (.jpeg or .jpg), bitmap (.bmp), GIF (.gif), TIFF (.tif or .tiff), Portable Network Graphics (.png), or any of a couple dozen other formats.

When you click (or double-click) a file icon while in File Explorer, the file opens in whatever is the default program for its type. If you have more than one program that can open the file type, you can override the default and open the file with some other program.

Right-click the file's icon and choose Open With, as in Figure 41.1. The Open With option will be available only if you have two or more programs installed that can open that type of file.

FIGURE 41.1

Using the Open With option

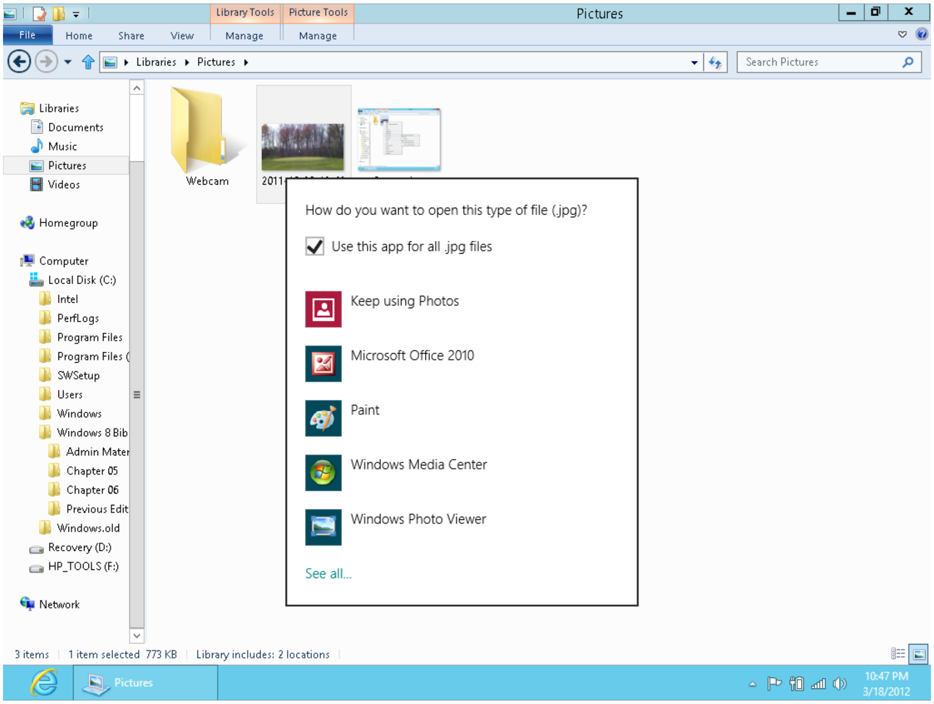

Library Tools
Picture Tools
Pictures
File
Home
Share
View
Manage
Manage
Libraries ▸ Pictures ▸
Search Pictures
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Intel
PerfLogs
Program Files
Program Files (
SWSetup
Users
Windows
Windows 8 Bib
Admin Mater
Chapter 05
Chapter 06
Previous Edit
Windows.old
Recovery (D:)
HP_TOOLS (F:)
Network
Webcam
2011-
Open
Set as desktop background
Edit
Print
Preview
Rotate right
Rotate left
Open with
Share with
Send to
Cut
Copy
Create shortcut
Delete
Rename
Open file location
Properties
Microsoft Office 2010
Paint
Photos
Windows Media Center
Windows Photo Viewer
Choose default program...
2 items
1 item selected 773 KB
Library includes: 2 locations
Pictures
10:47 PM
3/18/2012

If you want to keep the current default program for this type of file, and override that just this time, click the name of the program you want to use to open the file.

If you want to change the default program that Windows always uses to open that type of file, click Choose Default Program at the bottom of the Open With menu. The Open With dialog box shown in Figure 41.2 opens.

FIGURE 41.2

The Open With dialog box


Library Tools
Picture Tools
Pictures
File
Home
Share
View
Manage
Manage
Libraries
Pictures
Search Pictures
Libraries
Documents
Music
Pictures
Videos
Homegroup
Computer
Local Disk (C:)
Intel
PerfLogs
Program Files
Program Files (
SWSetup
Users
Windows
Windows 8 Bib
Admin Mater
Chapter 05
Chapter 06
Previous Edit
Windows.old
Recovery (D:)
HP_TOOLS (F:)
Network
Webcam
2011
3 items
1 item selected 773 KB
Library includes: 2 locations
Pictures
10:47 PM
3/18/2012

How do you want to open this type of file (.jpg)?

☑ Use this app for all .jpg files

- Keep using Photos
- Microsoft Office 2010
- Paint
- Windows Media Center
- Windows Photo Viewer

See all...

I Don't See Any Filename Extensions

If Windows is configured to hide known filename extensions, you won't see them in your Pictures folder or other folders. But you can point to a file icon and see the filename extension in the tooltip that appears at the mouse pointer. Optionally, you can make filename extensions visible by clicking the File Name Extensions item on the View tab in Explorer.

Click whatever program you want to use for opening that type of document. Also, make sure the Use This App for All <*filetype*> Files option is selected (checked). Otherwise your new choice won't be saved.

If you can't find the program you want to use as the default, you can click the See All link to look for it. Just make sure that the program you want to use is capable of opening that type of document. You can also use the Look For An App On The Web, Look For An App In The Store, and Look For An App On This PC options if you want to look for a program to handle your selected file type.

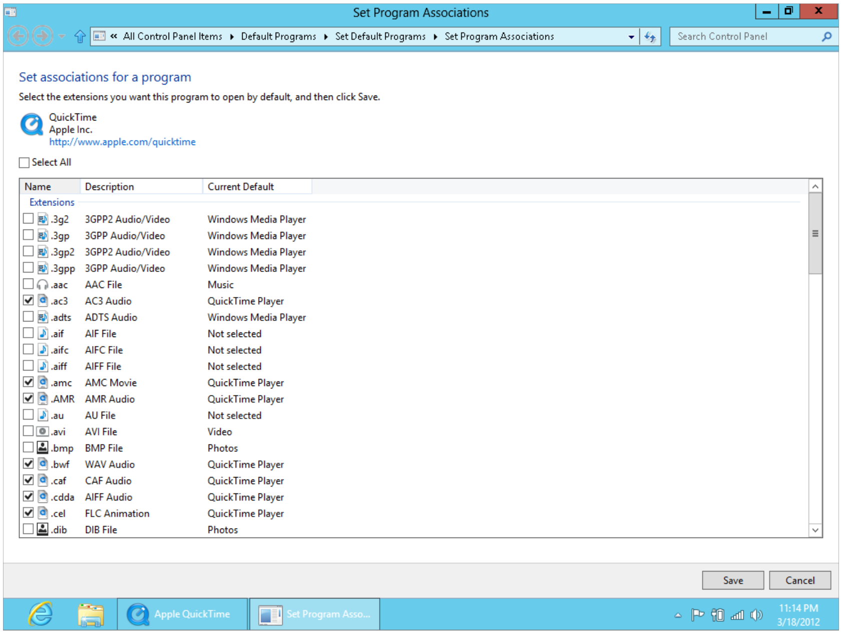
Setting default programs using the Open With dialog box is just one way to do it. Many programs have options within them that enable you to choose which file types you want to associate with the program. The settings within the program might even override the settings you specify in Windows. So sometimes you have to go into the program that's acting as the default for a file type and make a change there.

Unfortunately, there's no one-rule-fits-all for the hundreds of programs that allow you to change associations within a program. Typically you start by opening the program and choosing Tools ➪ Options or Edit ➪ Preferences, or something like that, to get to the program's main options. To illustrate, we'll use QuickTime (Version 7) as an example because many people have that program.

In QuickTime, you first open the QuickTime player from the Windows 8 Start screen. Then choose Edit ➪ Preferences ➪ QuickTime Preferences from its menu bar. Click the Browser tab, click File Types, and you're taken to a dialog box where you can specify file types that should open automatically in QuickTime. Select the file types you do want to open in QuickTime automatically. Clear the checkmarks for those file types for which QuickTime should not act as the default program. Figure 41.3 shows an example.

FIGURE 41.3

Select QuickTime as the default program for audio and video file types



Set Program Associations
All Control Panel Items ▸ Default Programs ▸ Set Default Programs ▸ Set Program Associations
Search Control Panel

Set associations for a program

Select the extensions you want this program to open by default, and then click Save.

QuickTime
Apple Inc.
http://www.apple.com/quicktime

☐ Select All

Name	Description	Current Default
Extensions		
☐ .3g2	3GPP2 Audio/Video	Windows Media Player
☐ .3gp	3GPP Audio/Video	Windows Media Player
☐ .3gp2	3GPP2 Audio/Video	Windows Media Player
☐ .3gpp	3GPP Audio/Video	Windows Media Player
☐ .aac	AAC File	Music
☑ .ac3	AC3 Audio	QuickTime Player
☐ .adts	ADTS Audio	Windows Media Player
☐ .aif	AIF File	Not selected
☐ .aifc	AIFC File	Not selected
☐ .aiff	AIFF File	Not selected
☑ .amc	AMC Movie	QuickTime Player
☑ .AMR	AMR Audio	QuickTime Player
☐ .au	AU File	Not selected
☐ .avi	AVI File	Video
☐ .bmp	BMP File	Photos
☑ .bwf	WAV Audio	QuickTime Player
☑ .caf	CAF Audio	QuickTime Player
☑ .cdda	AIFF Audio	QuickTime Player
☑ .cel	FLC Animation	QuickTime Player
☐ .dib	DIB File	Photos

When you associate a program with a given file type, you just have to make sure to always specify a program that *can* open files of a given type. For example, it wouldn't make sense to associate video or audio files with Microsoft Word or Excel because those programs don't play multimedia files.

Using the Default Programs Page

Right-clicking a document's icon and choosing Open With is the quick and easy way to set a default program on-the-fly. But it's not the only method. And you're not limited to setting defaults based on file types either. You can also set defaults for *protocols*. A protocol is a standardized way of doing things. Different Internet services use different protocols. For example, the web uses HTTP, which stands for Hypertext Transfer Protocol.

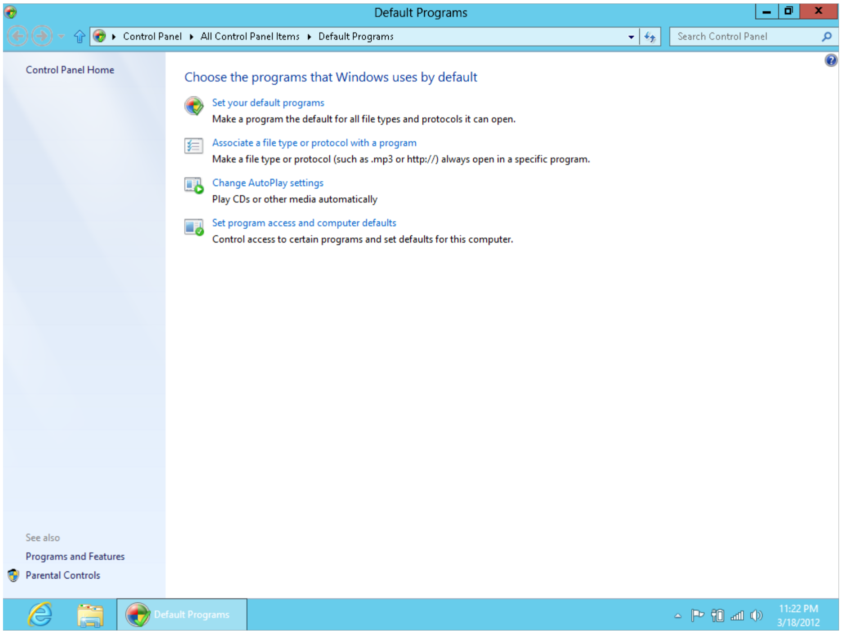
You can also set default actions for CDs, DVDs, and devices you connect to your computer. Use the Default Programs page in the Control Panel to set all of these different kinds of defaults. To get there, use whichever method is easiest for you:

- From the desktop, press Windows+X and choose Control Panel ➪ Programs ➪ Default Programs.
- From the Windows 8 Start screen, display the Charms and click Search. On the Apps screen choose Default Programs.

You'll see the options shown in Figure 41.4 and summarized here.

FIGURE 41.4

Setting programs in the Default Programs tool



Default Programs
Control Panel ▸ All Control Panel Items ▸ Default Programs
Search Control Panel
Control Panel Home
See also
Programs and Features
Parental Controls
Default Programs
11:22 PM
3/18/2012

Choose the programs that Windows uses by default

Set your default programs
Make a program the default for all file types and protocols it can open.

Associate a file type or protocol with a program
Make a file type or protocol (such as .mp3 or http://) always open in a specific program.

Change AutoPlay settings
Play CDs or other media automatically

Set program access and computer defaults
Control access to certain programs and set defaults for this computer.

- **Set Your Default Programs:** Use this option to choose default programs for your user account only.
- **Associate A File Type Or Protocol With A Program:** Like the preceding item, except you start by choosing a file type or protocol rather than a program.
- **Change AutoPlay Settings:** Use this option to change what happens when you insert a CD or DVD or connect a camera to your computer.
- **Set Program Access And Computer Defaults:** This one is strictly for administrators. It sets defaults for Internet access and media players for all user accounts.

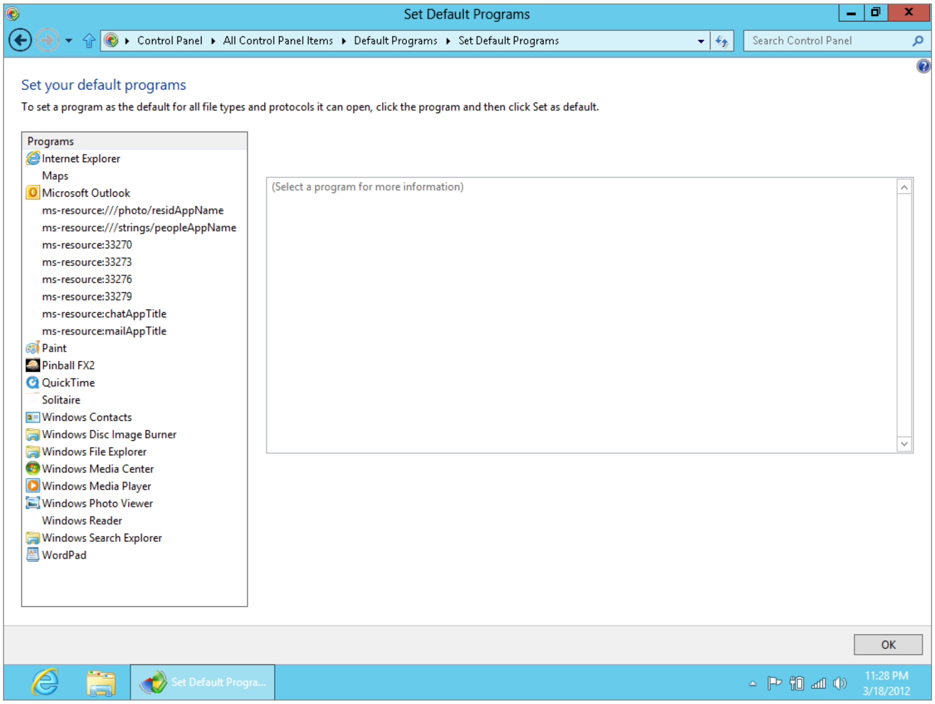
The sections that follow describe each option.

Setting your default programs

The first item in Default Programs lets you pick and choose which file types and protocols you want to associate with programs. When you click Set Your Default Programs, you're taken to a page like the one in Figure 41.5.

FIGURE 41.5

Setting programs as defaults for file types and protocols



Set your default programs

To set a program as the default for all file types and protocols it can open, click the program and then click Set as default.

(Select a program for more information)

Set Default Programs
Control Panel ▸ All Control Panel Items ▸ Default Programs ▸ Set Default Programs
Search Control Panel
Programs
Internet Explorer
Maps
Microsoft Outlook
ms-resource:///photo/residAppName
ms-resource:///strings/peopleAppName
ms-resource:33270
ms-resource:33273
ms-resource:33276
ms-resource:33279
ms-resource:chatAppTitle
ms-resource:mailAppTitle
Paint
Pinball FX2
QuickTime
Solitaire
Windows Contacts
Windows Disc Image Burner
Windows File Explorer
Windows Media Center
Windows Media Player
Windows Photo Viewer
Windows Reader
Windows Search Explorer
WordPad
OK
Set Default Progra...
11:28 PM
3/18/2012

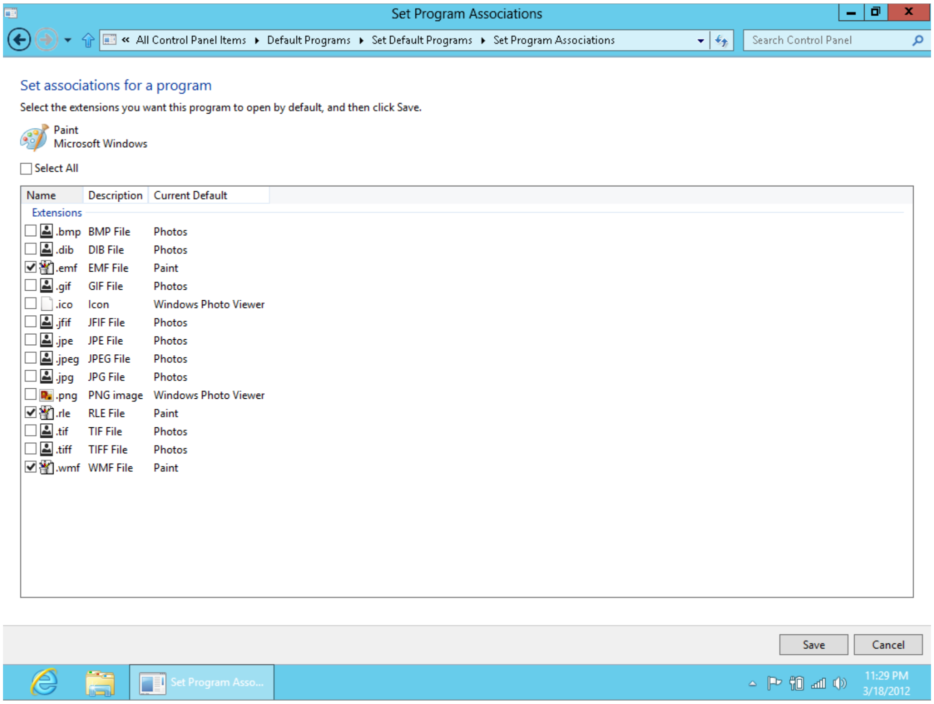
Click a program name in the left column to see a description of that program in the right column. Then you can choose one of the following options below that description:

- **Set This Program As Default:** Choose this option to make the selected program the default for all file types and protocols it can handle.
- **Choose Defaults For This Program:** Limit the program to act as the default for only certain file types and protocols.

Choosing the second option takes you to a list of all the file types and protocols that the program supports, as in Figure 41.6. You can scroll through the list and select the file types and protocols for which the program should act as default. Clear the checkbox of any file type or protocol for which you want some other program to act as the default. Then click Save to return to the previous page.

FIGURE 41.6

Setting file type associations for a program


Set Program Associations
« All Control Panel Items ▸ Default Programs ▸ Set Default Programs ▸ Set Program Associations
Search Control Panel
Save
Cancel
Set Program Asso...
11:29 PM
3/18/2012

Set associations for a program

Select the extensions you want this program to open by default, and then click Save.

Paint
Microsoft Windows

☐ Select All

Name	Description	Current Default
Extensions		
☐ .bmp	BMP File	Photos
☐ .dib	DIB File	Photos
☑ .emf	EMF File	Paint
☐ .gif	GIF File	Photos
☐ .ico	Icon	Windows Photo Viewer
☐ .jfif	JFIF File	Photos
☐ .jpe	JPE File	Photos
☐ .jpeg	JPEG File	Photos
☐ .jpg	JPG File	Photos
☐ .png	PNG image	Windows Photo Viewer
☑ .rle	RLE File	Paint
☐ .tif	TIF File	Photos
☐ .tiff	TIFF File	Photos
☑ .wmf	WMF File	Paint

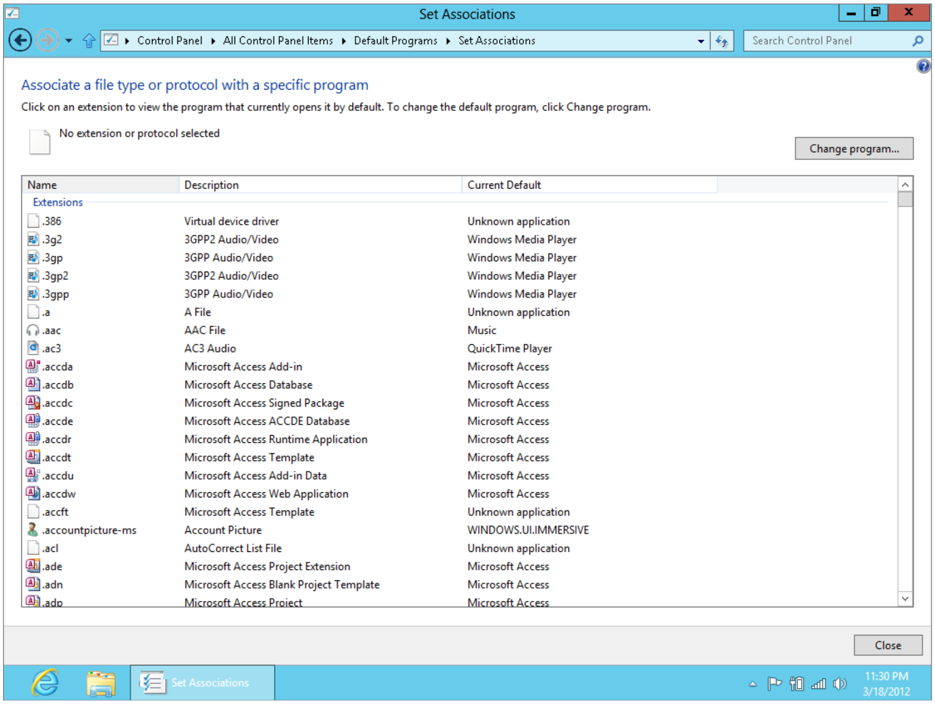
When you've finished choosing defaults for programs, click OK to return to the main Default Programs page.

Associating a file type or protocol with a specific program

The second option in Default Programs is similar to the first. But rather than starting with a program, you start with a file type or protocol. When you click Associate A File Type Or Protocol With A Specific Program, you see options similar to those in Figure 41.7.

FIGURE 41.7

Setting file types with specific programs



Associate a file type or protocol with a specific program

Click on an extension to view the program that currently opens it by default. To change the default program, click Change program.

No extension or protocol selected

Name	Description	Current Default
Extensions		
.386	Virtual device driver	Unknown application
.3g2	3GPP2 Audio/Video	Windows Media Player
.3gp	3GPP Audio/Video	Windows Media Player
.3gp2	3GPP2 Audio/Video	Windows Media Player
.3gpp	3GPP Audio/Video	Windows Media Player
.a	A File	Unknown application
.aac	AAC File	Music
.ac3	AC3 Audio	QuickTime Player
.accda	Microsoft Access Add-in	Microsoft Access
.accdb	Microsoft Access Database	Microsoft Access
.accdc	Microsoft Access Signed Package	Microsoft Access
.accde	Microsoft Access ACCDE Database	Microsoft Access
.accdr	Microsoft Access Runtime Application	Microsoft Access
.accdt	Microsoft Access Template	Microsoft Access
.accdu	Microsoft Access Add-in Data	Microsoft Access
.accdw	Microsoft Access Web Application	Microsoft Access
.accft	Microsoft Access Template	Unknown application
.accountpicture-ms	Account Picture	WINDOWS.UI.IMMERSIVE
.acl	AutoCorrect List File	Unknown application
.ade	Microsoft Access Project Extension	Microsoft Access
.adn	Microsoft Access Blank Project Template	Microsoft Access
.adp	Microsoft Access Project	Microsoft Access

File types are listed first, in alphabetical order. Protocols are separate at the bottom of the list. Use the scroll bar to scroll through the list. To assign a default program to a file type or protocol, first click the item you want to change and click the Change Program button. Then use the Open With dialog box that opens to choose a program.

NOTE

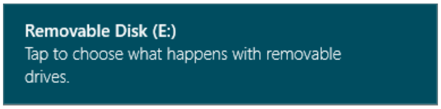
Don't worry about items marked as Unknown Application. Most of those aren't documents anyway and don't need to have a default program. You don't have to assign a default program to every item in the list!

Changing AutoPlay settings

AutoPlay is a Windows feature that lets you choose what program you want to use to play content on CDs, DVDs, and devices (such as MP3 devices). Chances are you've already seen the AutoPlay screen at least once, after you inserted a CD or DVD, or connected a camera or disk drive. Figure 41.8 shows an example.

FIGURE 41.8

The Windows 8 AutoPlay screen appears at the top of the window

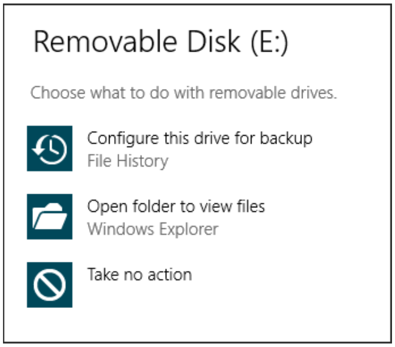


Removable Disk (E:)
Tap to choose what happens with removable drives.

Click the AutoPlay screen to see a list of actions to take. The AutoPlay dialog box lets you choose the action you want to take with the selected media. For a removable device that always has pictures on it, you might choose one of the Import Pictures And Videos options. Or, as the example in Figure 41.9 shows, the actions for the USB flash drive that we inserted include using the drive for backup purposes or showing the contents of the drive. Until you set a default AutoPlay option, however, Windows continues to ask you what you want to do when you attach the device.

FIGURE 41.9

Selecting an action to take when inserting a USB flash drive



Removable Disk (E:)

Choose what to do with removable drives.

Configure this drive for backup
File History

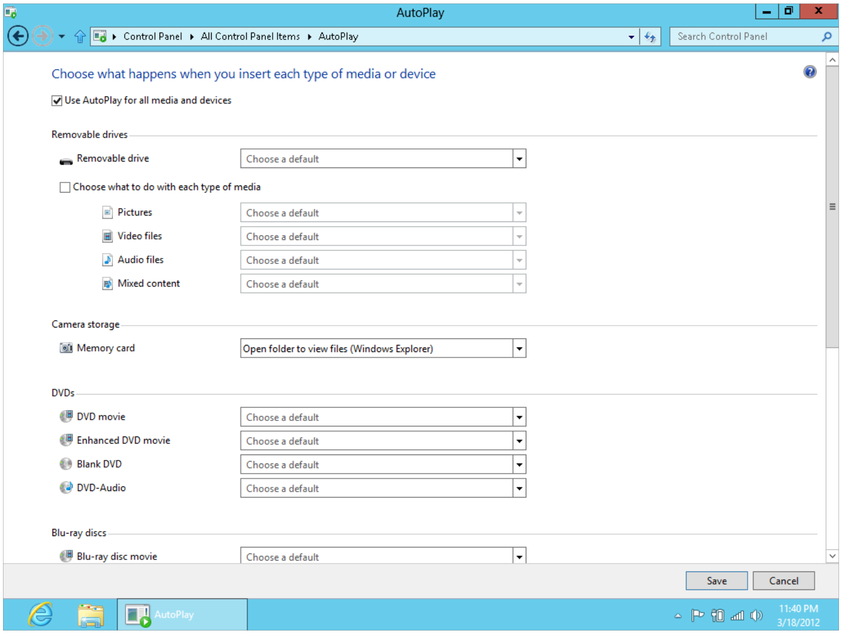
Open folder to view files
Windows Explorer

Take no action

When you click View More AutoPlay Options in the Control Panel, you get to see all of your current AutoPlay default settings, as in Figure 41.10. You can also get there by clicking Change AutoPlay Settings in the Default Programs item in the Control Panel. Scroll to the bottom of the list to find icons for devices you connect to your computer, such as digital cameras.

FIGURE 41.10

Setting AutoPlay options for each type of media or device you attach to your PC



Choose what happens when you insert each type of media or device

☑ Use AutoPlay for all media and devices

Removable drives

Removable drive	Choose a default

☐ Choose what to do with each type of media

Pictures	Choose a default
Video files	Choose a default
Audio files	Choose a default
Mixed content	Choose a default

Camera storage

Memory card	Open folder to view files (Windows Explorer)

DVDs

DVD movie	Choose a default
Enhanced DVD movie	Choose a default
Blank DVD	Choose a default
DVD-Audio	Choose a default

Blu-ray discs

Blu-ray disc movie	Choose a default

Chapter 25 describes all the different types of CDs and DVDs and provides some suggestions for choosing AutoPlay defaults.

The Shift Key Doesn't Work Like It Used To

In previous versions of Windows, you could hold down the Shift key while inserting a disk or connecting a device to override the default action for the device. You can still do that in Windows 8. But the AutoPlay dialog box still opens. (The default program doesn't open.) To prevent the AutoPlay dialog box from opening when using the Shift key, you need to deselect the Use AutoPlay For All Media And Devices checkbox at the top of the AutoPlay page shown in Figure 41.10.

To change the default action for any item, click the current action and choose the action you want from the menu that drops down. Click Save after making your changes to return to Program Defaults.

Setting program access and computer defaults

Anybody who has a user account can choose defaults using any of the methods described in this chapter. The Set Program Access And Computer Defaults option is strictly for computer administrators. It sets defaults that apply to all user accounts, and can even be used to limit programs that they can use. This is most often used in corporate settings when administrators want very tight control over how staff members use their computers. But anyone with an administrative user account on a home computer can use it to control family members' program use as well.

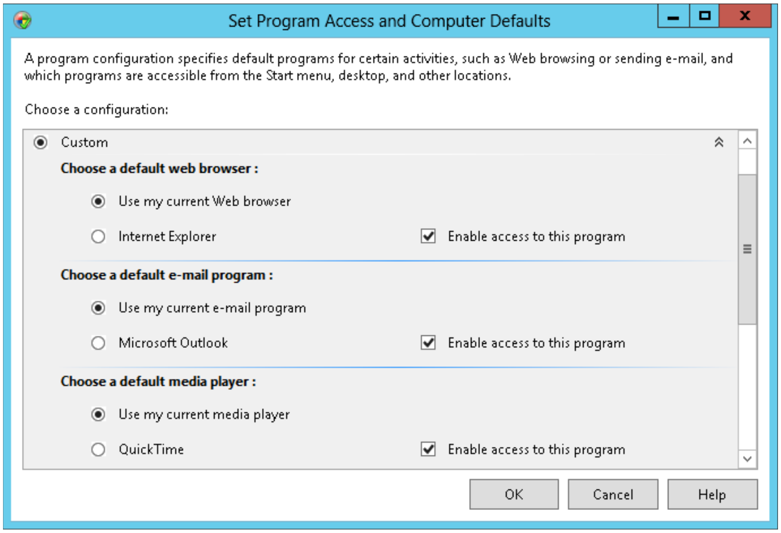
Because the Set Program Access And Computer Defaults option can so severely limit what all users can do, you need administrative privileges just to start it. If you're in a standard user account, you'll need to log out. Then log in to an administrative account to open that option. When you first open it, you'll see three options:

- **Microsoft Windows:** Choose this option if you want to set the Internet programs that came with Windows 8 as the default programs.
- **Non-Microsoft:** Choose this option if you don't want to use any Microsoft Internet programs.
- **Custom:** Choose this option if you want to use a combination of Microsoft and non-Microsoft Internet programs.

After you choose one of these options, you'll see more options under that category. The exact options vary depending on what you choose. But they work in a similar manner. We'll use the Custom category, shown in Figure 41.11, as an example, because it offers the most options.

FIGURE 41.11

Setting program access and computer defaults



Set Program Access and Computer Defaults

A program configuration specifies default programs for certain activities, such as Web browsing or sending e-mail, and which programs are accessible from the Start menu, desktop, and other locations.

Choose a configuration:

● Custom

Choose a default web browser :

● Use my current Web browser

○ Internet Explorer ☑ Enable access to this program

Choose a default e-mail program :

● Use my current e-mail program

○ Microsoft Outlook ☑ Enable access to this program

Choose a default media player :

● Use my current media player

○ QuickTime ☑ Enable access to this program

What's a Java Virtual Machine?

Java is a programming language often used with Internet programs and applets (small programs embedded in web pages). The virtual machine (also called a runtime environment) allows those programs to run on your computer. It's not a mandatory item unless you use programs that require it or visit websites that require it.

Typically, if you needed the Java Virtual Machine, you'd be prompted to download it automatically when it's required. You can also download and install it at any time from `www.java.com/download`.

As you can see in Figure 41.11, the first options let you choose the default web browser, e-mail client, and media player for online music and video. Scrolling down enables you to choose a default instant messaging program and Java virtual machine. The options available to you depend on what programs you have installed on your computer at the moment. For each program, you have the following options:

- **Use My Current:** Choose this option to keep whatever program you're currently using as the default program. This will be the only option when you don't have multiple programs to choose from.
- **<*Program Name*>:** To specify a program as the default, click the option button to the left of its name.
- **Enable Access To This Program:** Choosing this option allows users to run the program. Clearing the checkbox hides the program's icon on the Start menu and elsewhere, preventing users from running the program.

There will be times when you can't choose exactly the option you want. Or when you choose an option, the selected program doesn't comply. That's because the programmers who create these programs aren't required to make them work with the Program Defaults selections. If that's a problem, your only recourse is to contact the program publisher. They may have a newer version that's compatible with setting program defaults in Windows 8.

Click OK when you've finished making your selections. You might see a message stating that your choices might not work because of current file associations. If you click Yes, Windows 8 will try to change the file associations to go with the new default program automatically. If it doesn't work, you can change file associations manually.

Wrap-Up

Default programs are programs that start automatically when you open a document or use an Internet protocol such as e-mail or the web. When you have two or more programs that can open a document or use an Internet protocol, you can choose which one acts as the default. Choosing a default doesn't preclude you from using other programs.

The default just determines which program is used when you don't specify otherwise. Windows 8 offers several methods of choosing default programs:

- To set the default for a file type on the fly, right-click a file's icon and choose Open With ➪ Choose Default Program.
- To use some program other than the default for a document, right-click the icon, and choose Open With and the name of the program you want to use.
- The Program Defaults page in Control Panel provides ways of setting multiple default programs from a single page.
- The Set Your Default Programs option enables you to choose a program and specify the documents and protocols for which it should act as the default.
- The Associate A File Type Or Protocol With A Program option enables you to first choose a filename extension or protocol, and then choose the program that will be the default.
- The Change AutoPlay Settings option enables you to choose what happens when you insert a disc or connect a device.
- The Set Program Access And Computer Defaults option allows an administrator to control defaults and programs for all user accounts.

CHAPTER
42

Managing Programs and Processes

IN THIS CHAPTER

Starting and using Task Manager

What to do when your system hangs (freezes up)

Viewing running processes

Monitoring performance and resource use

You are no doubt familiar with the terms *application* and *program*. These two terms describe program code that, whether one component or several components, serve a specific function. For example, a word processor is an application. Some applications, however, comprise multiple *processes* running at the same time. In addition, a process can comprise multiple threads of execution, each performing a specific task. Although you typically concern yourself with programs, you sometimes need to think about the processes that make up a program, particularly if one of those processes fails. That's where Task Manager comes into play.

Task Manager is a program included with Windows 8 for viewing and managing running programs and processes. You can use it to seek out performance bottlenecks, close hung programs and processes without restarting the system, and more.

Getting to Know Task Manager

Task Manager is a program that lets you view and manage running programs and processes, as well as view performance data for your computer and network. In Windows 8, Task Manager has changed from its previous releases. If you are familiar with Task Manager in Windows 7, for example, you are in for quite a change with the new (and in our opinion improved) Task Manager.

You can start Task Manager in several ways:

- Press Ctrl+Alt+Del and click Start Task Manager.
- Right-click the clock or an empty spot on the taskbar and choose Start Task Manager.
- Display the Charms Bar, click Search, and type **task**. Click Task Manager on the Apps screen.

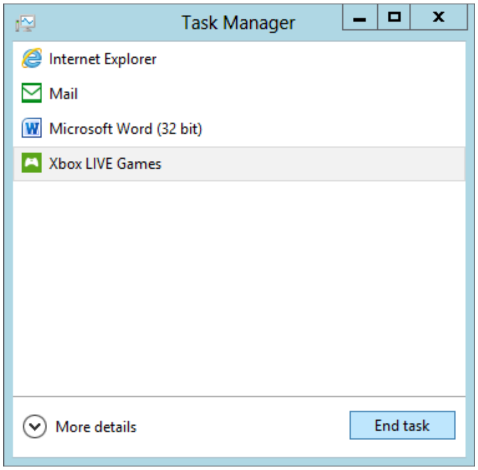
TIP

If a program is hung (frozen), right-clicking the taskbar might not work. But pressing Ctrl+Alt+Del might still work. If Ctrl+Alt+Del doesn't work to bring up Task Manager and the computer is unresponsive, turning the computer off and back on is generally the only way to get it going again.

Figure 42.1 shows the new Task Manager and four apps and programs running. Task Manager behaves much like any program window. It has a button on the Windows taskbar when open. You can drag the program window around by its title bar and size it by dragging any corner or edge. You can also configure it so it stays on the top of the stack of open windows so you can always see it. You can change that by choosing right-clicking a blank area on the window or on the bottom of the window and choosing Always On Top.

FIGURE 42.1

Task Manager in its normal view

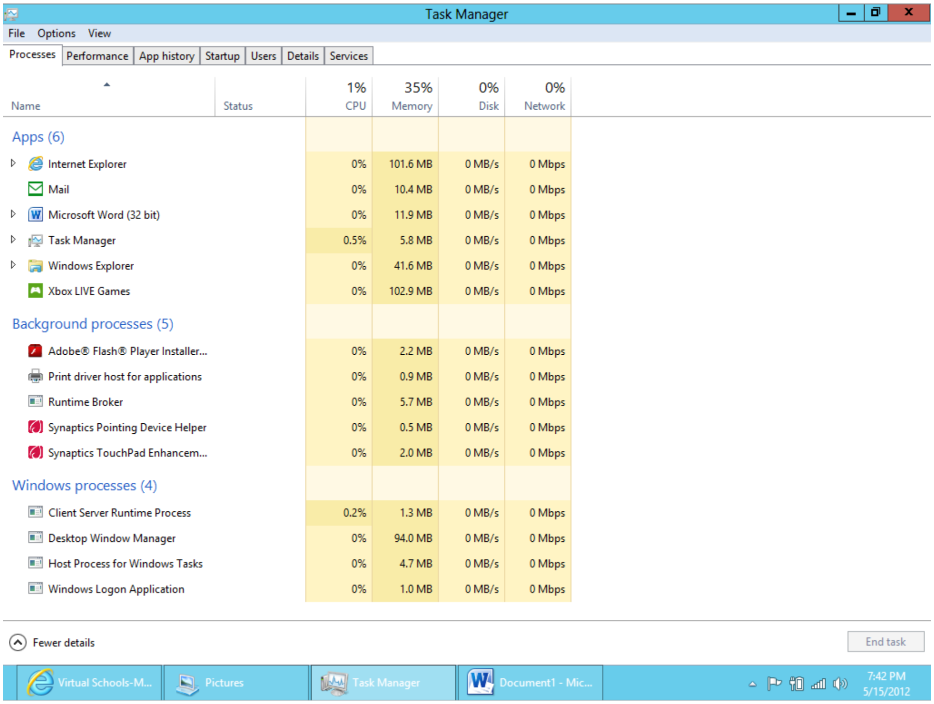


Viewing More and Less Detail

With Windows 8 Task Manager, you have the choice of showing a list of just the running applications, as shown in Figure 42.1, or a display with multiple tabs filled with system and application data (as shown in Figure 42.2). The former view shows fewer details while the latter shows more details. When showing less detail, you have fewer options for controlling and viewing application information, but you can still stop an app or application.

FIGURE 42.2

Task Manager in its detailed view


Task Manager
File
Options
View
Processes
Performance
App history
Startup
Users
Details
Services
Fewer details
End task
Virtual Schools-M...
Pictures
Task Manager
Document1 - Mic...
7:42 PM
5/15/2012

Name	Status	1% CPU	35% Memory	0% Disk	0% Network
Apps (6)					
Internet Explorer		0%	101.6 MB	0 MB/s	0 Mbps
Mail		0%	10.4 MB	0 MB/s	0 Mbps
Microsoft Word (32 bit)		0%	11.9 MB	0 MB/s	0 Mbps
Task Manager		0.5%	5.8 MB	0 MB/s	0 Mbps
Windows Explorer		0%	41.6 MB	0 MB/s	0 Mbps
Xbox LIVE Games		0%	102.9 MB	0 MB/s	0 Mbps
Background processes (5)					
Adobe® Flash® Player Installer...		0%	2.2 MB	0 MB/s	0 Mbps
Print driver host for applications		0%	0.9 MB	0 MB/s	0 Mbps
Runtime Broker		0%	5.7 MB	0 MB/s	0 Mbps
Synaptics Pointing Device Helper		0%	0.5 MB	0 MB/s	0 Mbps
Synaptics TouchPad Enhancem...		0%	2.0 MB	0 MB/s	0 Mbps
Windows processes (4)					
Client Server Runtime Process		0.2%	1.3 MB	0 MB/s	0 Mbps
Desktop Window Manager		0%	94.0 MB	0 MB/s	0 Mbps
Host Process for Windows Tasks		0%	4.7 MB	0 MB/s	0 Mbps
Windows Logon Application		0%	1.0 MB	0 MB/s	0 Mbps

To switch between detail views, click the More Details button on the bottom of Task Manager. When viewing the More Details view, you can click the Fewer Details button to display the less details view.

Choosing Task Manager Views

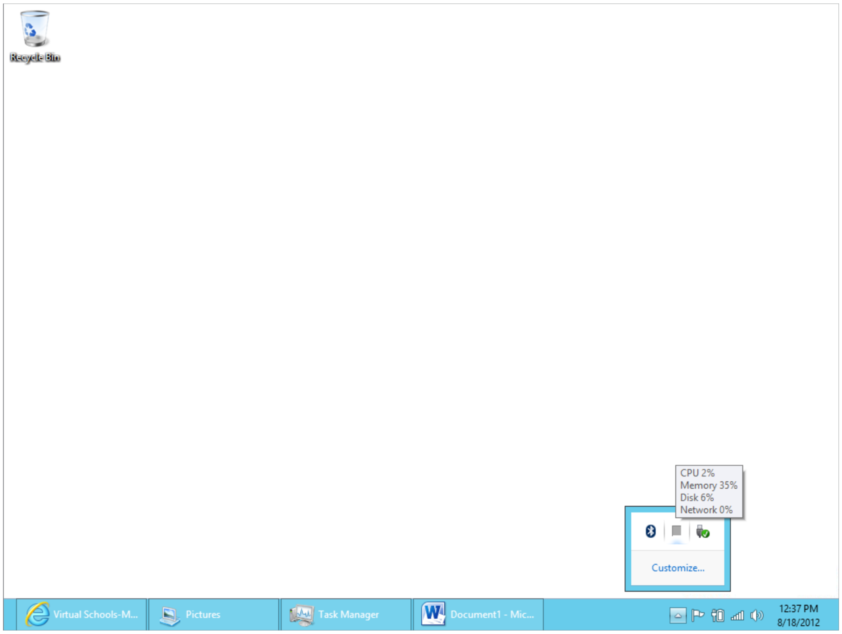
While viewing Task Manager in the More Details view, you can view and use Task Manager in several ways. On the Options menu in the menu bar, you have the following options:

- **Always On Top:** Choosing this option ensures that Task Manager is always on the top of the stack when it's open, so no other program windows can cover it.
- **Minimize On Use:** If selected, this option minimizes Task Manager whenever you choose the Switch To option to switch to another running program.
- **Hide When Minimized:** Normally when you minimize Task Manager, only its taskbar button remains visible. Choosing this option also hides the taskbar button when you minimize Task Manager.
- **Show Full Account Name:** When viewing information on the Users tab, you show the full user account name in the User column.

Whenever Task Manager is open, you'll see a small green square in the notification area unless Task Manager is configured to show notifications only. Pointing to that icon displays the current CPU (processor) usage, as shown in Figure 42.3. When Task Manager is minimized, you can double-click that little square to bring Task Manager back onto the desktop.

FIGURE 42.3

Task Manager notification icon



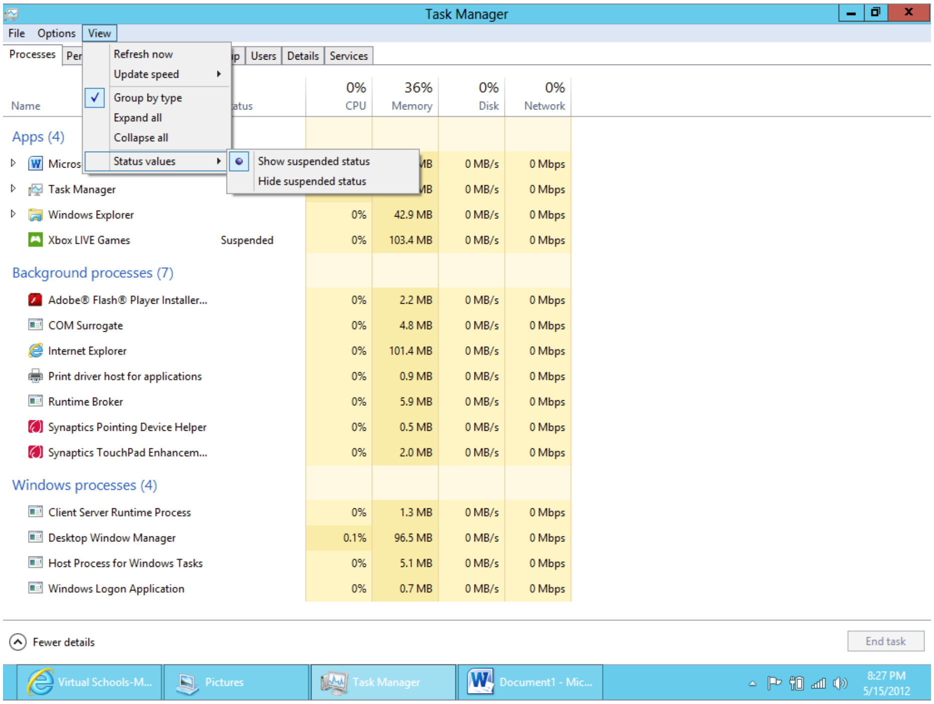
CPU 2%
Memory 35%
Disk 6%
Network 0%

If you prefer to have Task Manager show only notifications and not appear in the tray, click the Show Hidden Icons button on the tray and choose Customize. In the Notification Area Icons applet, find Task Manager in the Icons list, choose Only Show Notifications from the drop-down list, and click OK.

On the View menu in Task Manager, you have the following choices, as shown in Figure 42.4.

FIGURE 42.4

Task Manager's View menu


Task Manager
File
Options
View
Processes
Per
p
Users
Details
Services
Refresh now
Update speed
✓ Group by type
Expand all
Collapse all
Status values
● Show suspended status
Hide suspended status
Fewer details
End task
Virtual Schools-M...
Pictures
Task Manager
Document1 - Mic...
8:27 PM
5/15/2012

Name	atus	0% CPU	36% Memory	0% Disk	0% Network
Apps (4)					
Micros			MB	0 MB/s	0 Mbps
Task Manager			MB	0 MB/s	0 Mbps
Windows Explorer		0%	42.9 MB	0 MB/s	0 Mbps
Xbox LIVE Games	Suspended	0%	103.4 MB	0 MB/s	0 Mbps
Background processes (7)					
Adobe® Flash® Player Installer...		0%	2.2 MB	0 MB/s	0 Mbps
COM Surrogate		0%	4.8 MB	0 MB/s	0 Mbps
Internet Explorer		0%	101.4 MB	0 MB/s	0 Mbps
Print driver host for applications		0%	0.9 MB	0 MB/s	0 Mbps
Runtime Broker		0%	5.9 MB	0 MB/s	0 Mbps
Synaptics Pointing Device Helper		0%	0.5 MB	0 MB/s	0 Mbps
Synaptics TouchPad Enhancem...		0%	2.0 MB	0 MB/s	0 Mbps
Windows processes (4)					
Client Server Runtime Process		0%	1.3 MB	0 MB/s	0 Mbps
Desktop Window Manager		0.1%	96.5 MB	0 MB/s	0 Mbps
Host Process for Windows Tasks		0%	5.1 MB	0 MB/s	0 Mbps
Windows Logon Application		0%	0.7 MB	0 MB/s	0 Mbps

- **Refresh Now:** Causes Task Manager to refresh all of its data immediately, regardless of the Update Speed setting.
- **Update Speed:** Task Manager needs to use some computer resources to keep itself up to date with what's happening in the system at the moment. The Update Speed option lets you choose how often Task Manager updates itself, as follows:
  - **High:** Updates Task Manager twice per second.
  - **Normal:** Updates Task Manager every two seconds.
  - **Low:** Updates Task Manager every four seconds.
  - **Paused:** Updates Task Manager only when you choose View ➪ Refresh Now.
  - **Group By Type:** Shows apps, Windows process, and background processes in groups.
  - **Expand All:** Expands the lists of apps and processes to show any open documents, open websites (if you are running Internet Explorer or other browser), and subprocesses.
  - **Collapse All:** Collapses the list of running apps and processes.
  - **Status Values:** Displays on the Processes tab only and shows the status of suspended processes.

Not Responding? Task Manager to the Rescue

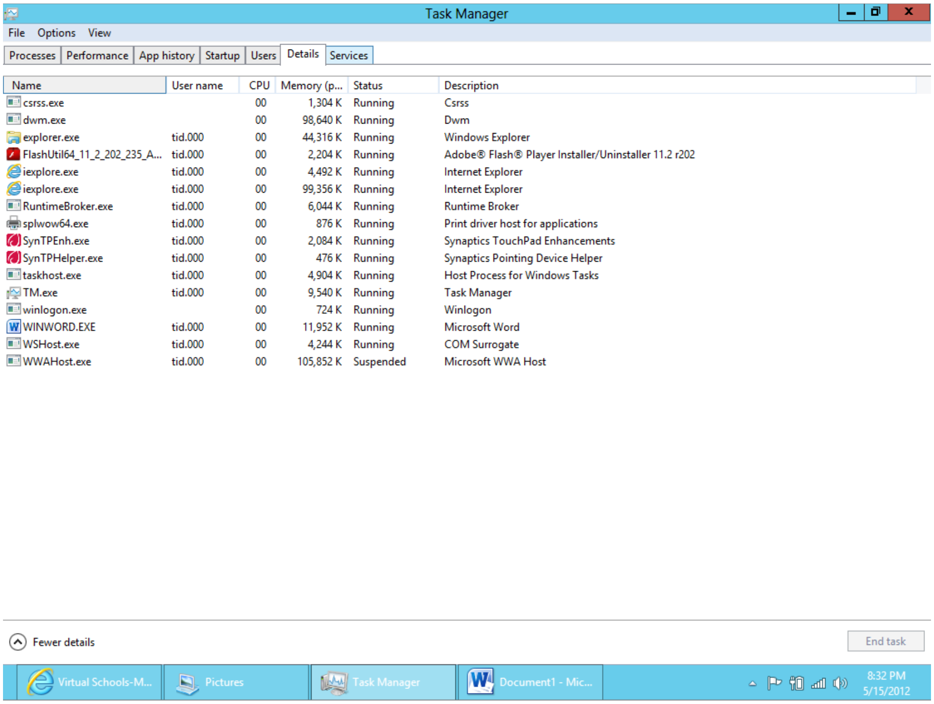
One of Task Manager's most useful roles is that of dealing with problems that cause programs, or your whole computer, to *hang* (to "freeze up," so that the mouse and keyboard don't work normally). Even when you can't get the mouse or keyboard to work, pressing Ctrl+Alt+Del and choosing Start Task Manager may get Task Manager open for you.

Closing frozen programs

Once Task Manager is open, click the Details tab, as shown in Figure 42.5. If a particular program is hung, its Status column usually reads Not Responding rather than Running. To close the hung program, click its name in the Name column, and then click the End Task button, which appears at the bottom right of the window. Task Manager tries to close the program normally, so that if you were working on a document at the time, you may be able to save any changes. (So don't expect the program to close immediately.)

FIGURE 42.5

Task Manager's Details tab



Name	User name	CPU	Memory (p...	Status	Description
csrss.exe		00	1,304 K	Running	Csrss
dwm.exe		00	98,640 K	Running	Dwm
explorer.exe	tid.000	00	44,316 K	Running	Windows Explorer
FlashUtil64_11_2_202_235_A...	tid.000	00	2,204 K	Running	Adobe® Flash® Player Installer/Uninstaller 11.2 r202
iexplore.exe	tid.000	00	4,492 K	Running	Internet Explorer
iexplore.exe	tid.000	00	99,356 K	Running	Internet Explorer
RuntimeBroker.exe	tid.000	00	6,044 K	Running	Runtime Broker
splwow64.exe	tid.000	00	876 K	Running	Print driver host for applications
SynTPEnh.exe	tid.000	00	2,084 K	Running	Synaptics TouchPad Enhancements
SynTPHelper.exe	tid.000	00	476 K	Running	Synaptics Pointing Device Helper
taskhost.exe	tid.000	00	4,904 K	Running	Host Process for Windows Tasks
TM.exe	tid.000	00	9,540 K	Running	Task Manager
winlogon.exe		00	724 K	Running	Winlogon
WINWORD.EXE	tid.000	00	11,952 K	Running	Microsoft Word
WSHost.exe	tid.000	00	4,244 K	Running	COM Surrogate
WWAHost.exe	tid.000	00	105,852 K	Suspended	Microsoft WWA Host

If the program won't close, you'll see a warning that moving ahead will close the program and leave unsaved work behind. To forge ahead, click End Process. The program may try to restart itself, depending on how it is designed.

Most likely, a process of reporting the problem and finding a solution will start after you end a program in this way. If you choose to allow Windows to send information about the program error, Windows sends information to a database of problems and searches that database for known problems and their solutions. You won't always get a solution to the problem, but you may receive information about an incompatible device driver or other issue by allowing Windows to report the problem.

If you don't have time to wait through that whole reporting process, you can cancel out of each dialog box by clicking its Cancel button.

Switching and starting tasks

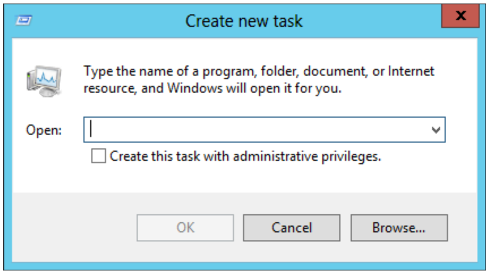
If the system is hung in such a way that you can't use the taskbar normally, and you want to work with open program windows individually, Task Manager provides some ways to accomplish that.

To bring a running program to the top of the stack of windows on the screen and make it the active window, click its name in the list of running tasks on Task Manager's Fewer Details screen, and then click the Switch To button. If you were working on a document in that program, you can save your work, and then exit the program normally (assuming that program is running normally).

If you need to bring up a diagnostic program or debugger, or simply need to start some other program, and you know the startup command for that program, right-click and choose Run New Task. The Create New Task dialog box, shown in Figure 42.6, opens. Type the startup command for the program (or the complete path to the program, if necessary), and click OK. You can also access this dialog box when in the More Details view. Choose the File menu and then click Run New Task.

FIGURE 42.6

Create New Task dialog box



Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

☐ Create this task with administrative privileges.

Restarting a hung computer

If your computer is so locked up that you can't get to Task Manager, or stop the offending program, you can try other things. If pressing Ctrl+Alt+Del works, you are taken to a Windows 8 screen with four options: Lock, Switch User, Sign Out, and Task Manager. You also have the Shut Down option at the lower right of the screen. Logging off or restarting will likely be your best bet. If at all possible, Windows attempts to give you a chance to save any unsaved work.

If the program that's hung is also the one that contains the unsaved work, there may be no way to save that work. You may have to restart without saving. For this reason, you should save your work often.

TIP

You can configure some programs to save automatically after a given period of time that you determine. Check the program's options to see if this capability is available in the programs you use most often.

Monitoring Performance with Task Manager

In addition to helping you deal with hung programs, Task Manager lets you see which processes in your system are using computer resources. On the Performance tab, as shown in Figure 42.7, you can see these key resources. The Performance tab in Task Manager provides both graphical and numeric summaries of CPU, memory, disk, and network hardware resource usage. To watch resource usage, leave Task Manager open and always on top as you run programs and use your computer in the usual ways. If you have multiple processors, or a multi-core processor, each may be represented in a separate pane in the CPU history, as shown at the top of the figure.

TIP

Double-click any chart or a blank area inside the window to show just the Graph Summary view. This shows only the graph, which you can leave onscreen as you analyze your system performance. Double-click it again to return to the normal Task Manager window. You can right-click on the graph on the Performance tab to choose Graph Summary view, which is the same as double-clicking it.

The Performance charts are useful for identifying major *performance bottlenecks*. For example, if the CPU charts run high, your CPU is working very hard. An errant application can consume inordinate amounts of CPU capacity. Also, reducing the number of running programs reduces CPU load.

A common performance bottleneck is limited physical memory. Running lots of programs when memory is limited forces the system to use lots of virtual memory, which in turn slows down performance because of the added overhead of swapping pages in and out. Increasing the amount of virtual memory (as discussed in Chapter 47, "Performance Tuning Your System") can help, but the best solution is to add more RAM (physical memory) to the system.

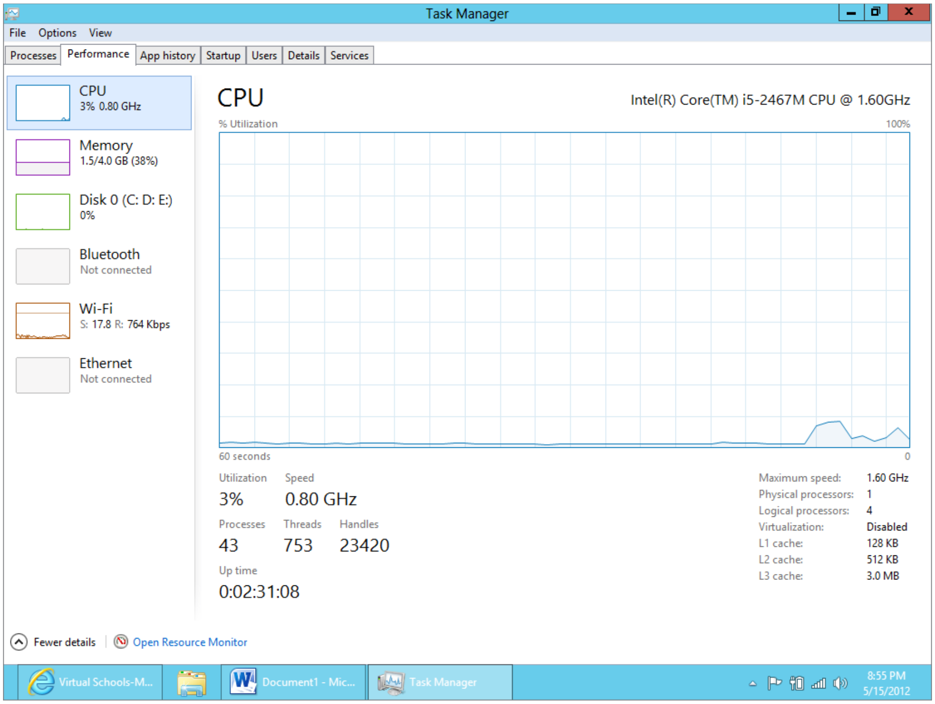
TIP

Microsoft's published minimum requirement is 1GB of RAM for 32-bit Windows 8 and 2GB for the 64-bit edition, although Windows 8 will run with less. Naturally, having more than the specified minimums provides better performance. With the relatively low cost of memory today, it's not unreasonable to have from 2GB to 4GB of physical memory.

Some of the resources you may see include the following:

FIGURE 42.7

Performance tab shows performance data


Task Manager
File
Options
View
Processes
Performance
App history
Startup
Users
Details
Services
% Utilization
100%
60 seconds
0
Fewer details
Open Resource Monitor
Virtual Schools-M...
Document1 - Mic...
Task Manager
8:55 PM
5/15/2012

CPU
3% 0.80 GHz

Memory
1.5/4.0 GB (38%)

Disk 0 (C: D: E:)
0%

Bluetooth
Not connected

Wi-Fi
S: 17.8 R: 764 Kbps

Ethernet
Not connected

CPU

Intel(R) Core(TM) i5-2467M CPU @ 1.60GHz

Utilization 3%

Speed 0.80 GHz

Processes 43

Threads 753

Handles 23420

Up time 0:02:31:08

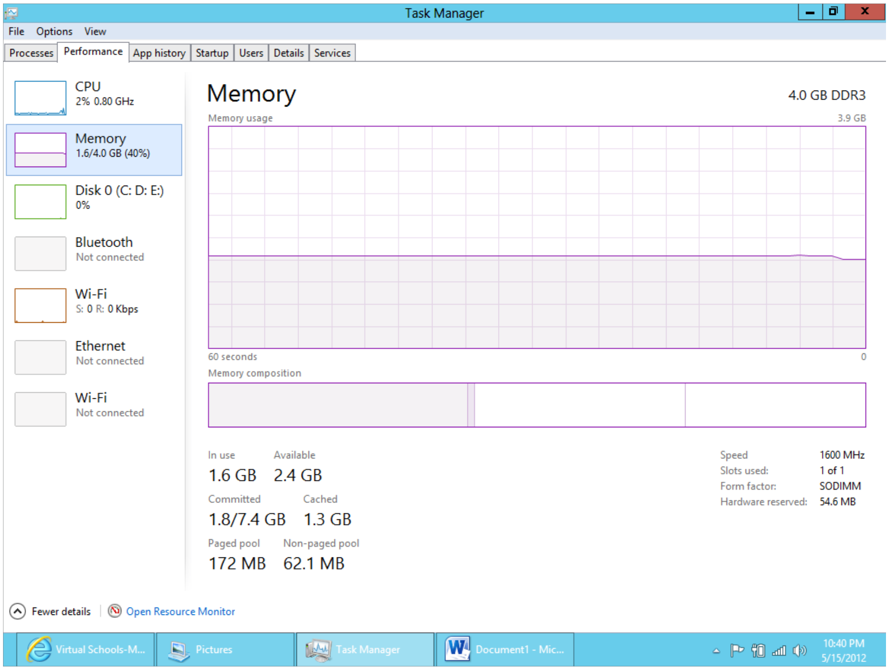
Maximum speed:	1.60 GHz
Physical processors:	1
Logical processors:	4
Virtualization:	Disabled
L1 cache:	128 KB
L2 cache:	512 KB
L3 cache:	3.0 MB

- **CPU:** Shows information about your computer's central processing unit (CPU). Data includes utilization, speed, processes, threads, handles, and up time. The bar graph shows a 60 second view of the CPU usage. Refer back to Figure 42.7 for an example of the CPU data.

- **Memory:** Provides data about the RAM on your computer, including the amount of RAM in use, how much is available on your computer, the committed memory (RAM plus virtual memory), cached memory, the Windows page pool, and the non-page pool (shown in Figure 42.8).

FIGURE 42.8

Performance tab shows memory data


Task Manager
File
Options
View
Processes
Performance
App history
Startup
Users
Details
Services
Fewer details
Open Resource Monitor
Virtual Schools-M...
Pictures
Task Manager
Document1 - Mic...
10:40 PM
5/15/2012

CPU
2% 0.80 GHz

Memory
1.6/4.0 GB (40%)

Disk 0 (C: D: E:)
0%

Bluetooth
Not connected

Wi-Fi
S: 0 R: 0 Kbps

Ethernet
Not connected

Wi-Fi
Not connected

Memory

4.0 GB DDR3

Memory usage 3.9 GB

60 seconds 0

Memory composition

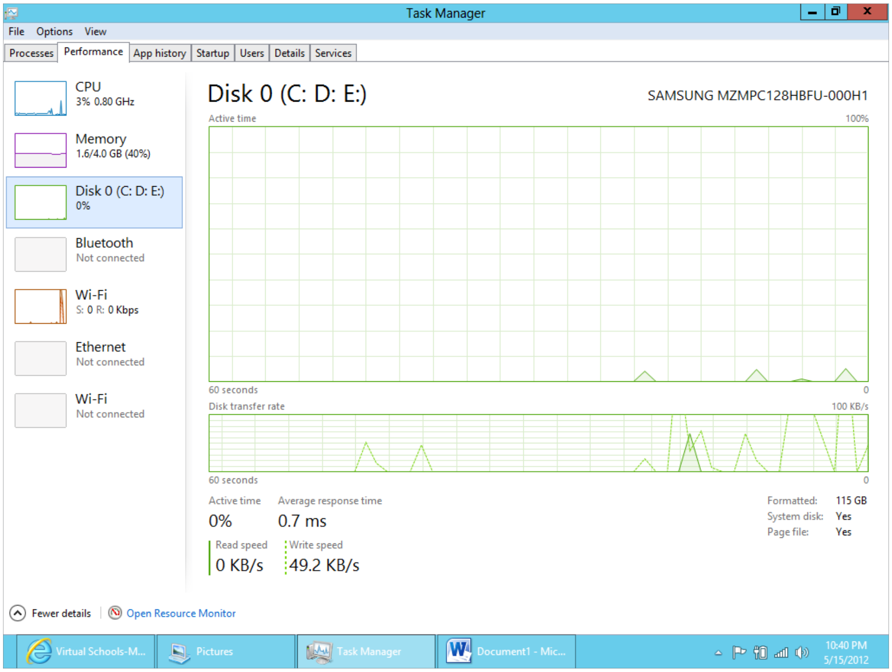
In use 1.6 GB
Available 2.4 GB
Committed 1.8/7.4 GB
Cached 1.3 GB
Paged pool 172 MB
Non-paged pool 62.1 MB

Speed: 1600 MHz
Slots used: 1 of 1
Form factor: SODIMM
Hardware reserved: 54.6 MB

- **Disk:** Provides data about your installed hard disks, including disk transfer rate, active time in percentage, average response time, disk read speed, and disk write speed (shown in Figure 42.9).

FIGURE 42.9

Performance tab shows disk data.


Task Manager
File Options View
Processes Performance App history Startup Users Details Services
CPU
3% 0.80 GHz
Memory
1.6/4.0 GB (40%)
Disk 0 (C: D: E:)
0%
Bluetooth
Not connected
Wi-Fi
S: 0 R: 0 Kbps
Ethernet
Not connected
Wi-Fi
Not connected
Disk 0 (C: D: E:)
SAMSUNG MZMPC128HBFU-000H1
Active time
100%
60 seconds
0
Disk transfer rate
100 KB/s
60 seconds
0
Fewer details
Open Resource Monitor
Virtual Schools-M...
Pictures
Task Manager
Document1 - Mic...
10:40 PM
5/15/2012

Active time 0%

Average response time 0.7 ms

Read speed 0 KB/s

Write speed 49.2 KB/s

Formatted: 115 GB

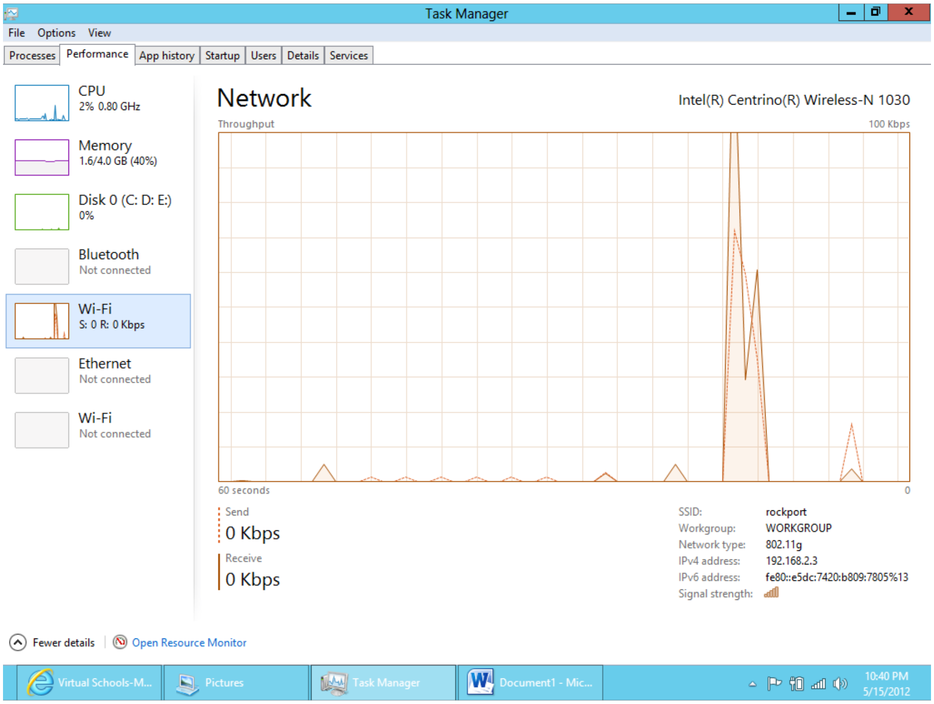
System disk: Yes

Page file: Yes

- **Bluetooth:** Provides performance data about your Bluetooth devices.
- **Wi-Fi:** Displays data about wireless network devices installed on your computer. You can see send and receive data (see Figure 42.10).

FIGURE 42.10

Performance tab shows Wi-Fi data


Task Manager
File
Options
View
Processes
Performance
App history
Startup
Users
Details
Services
CPU
2% 0.80 GHz
Memory
1.6/4.0 GB (40%)
Disk 0 (C: D: E:)
0%
Bluetooth
Not connected
Wi-Fi
S: 0 R: 0 Kbps
Ethernet
Not connected
Wi-Fi
Not connected
Network
Intel(R) Centrino(R) Wireless-N 1030
Throughput
100 Kbps
60 seconds
0
Fewer details
Open Resource Monitor
Virtual Schools-M...
Pictures
Task Manager
Document1 - Mic...
10:40 PM
5/15/2012

Send
0 Kbps

Receive
0 Kbps

SSID: rockport
Workgroup: WORKGROUP
Network type: 802.11g
IPv4 address: 192.168.2.3
IPv6 address: fe80::e5dc:7420:b809:7805%13
Signal strength:

Exactly how fast your computer runs at any given moment depends on the resources available to it at that moment. For example, if you have half a dozen programs running, all doing intensive tasks, they are eating up CPU resources. If you start another program, that program may run slower than usual, because the other running programs are consuming CPU resources.

Likewise, everything you open stores something in RAM. If RAM is nearly full, and you start another program that needs more memory than what's currently left in RAM, Windows has to start sloughing some of what's currently in RAM off to the hard disk (called *virtual memory*) to make room. It takes time to do that, so everything slows down.

Physical Memory Versus Virtual Memory

The term *physical memory* refers to the actual amount of RAM, on computer chips, installed in your computer. When you press Windows+X and choose System, the number to the right of the words "Installed Memory (RAM)" indicates the amount of physical memory installed on the motherboard inside your computer.

When things are busy in RAM, Windows moves some lesser-used items out to a special section of the hard disk called a *paging file*. The paging file looks and acts like RAM (to the CPU), even though it's actually space on your hard disk. Although Windows can be configured to not use a paging file, Windows, by default, sets aside some hard disk space for this paging file. (More on that topic in Chapter 47.)

A *page fault* is when the CPU "expects" to find something in RAM but has to fetch it from virtual memory instead. The term "fault" is a bit harsh here, because a certain amount of memory paging is normal and to be expected. Other terms used in this context include *Nonpaged memory* for physical memory and *Paged memory* for virtual memory.

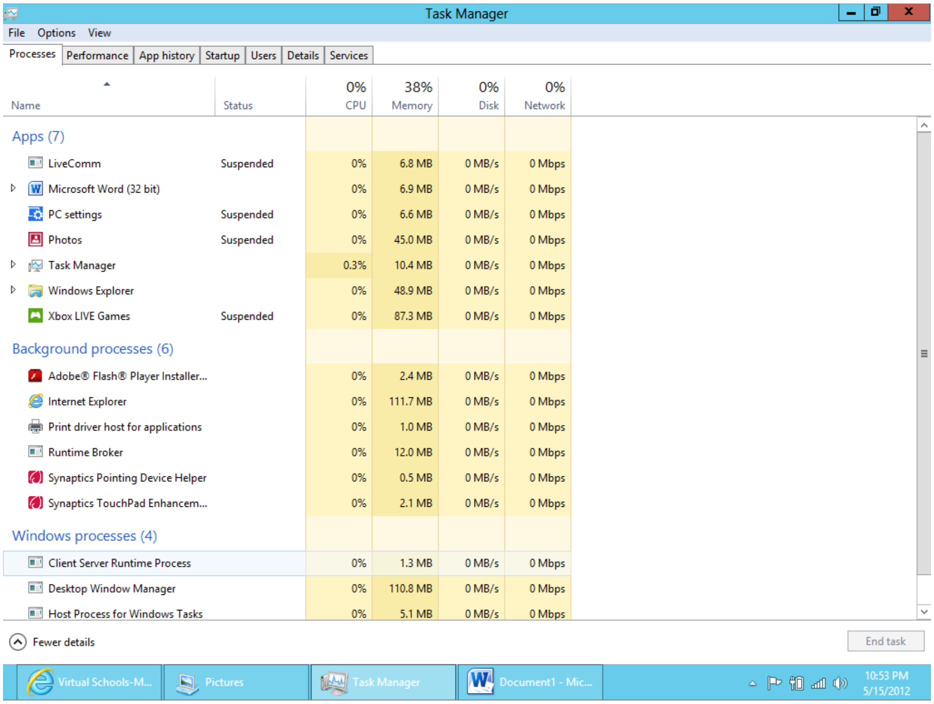
Managing Processes with Task Manager

Whereas applications usually run in windows and are listed on the Processes tab in Task Manager, processes have no program window. We say that processes run in the background because they don't show anything in particular on the screen.

Your running applications are actually one or more processes. To see all currently running processes, click the Processes tab in Task Manager. Each process is shown under the Windows Process category heading, as in the example shown in Figure 42.11.

FIGURE 42.11

Processes tab in Task Manager



Name	Status	0% CPU	38% Memory	0% Disk	0% Network
Apps (7)					
LiveComm	Suspended	0%	6.8 MB	0 MB/s	0 Mbps
Microsoft Word (32 bit)		0%	6.9 MB	0 MB/s	0 Mbps
PC settings	Suspended	0%	6.6 MB	0 MB/s	0 Mbps
Photos	Suspended	0%	45.0 MB	0 MB/s	0 Mbps
Task Manager		0.3%	10.4 MB	0 MB/s	0 Mbps
Windows Explorer		0%	48.9 MB	0 MB/s	0 Mbps
Xbox LIVE Games	Suspended	0%	87.3 MB	0 MB/s	0 Mbps
Background processes (6)					
Adobe® Flash® Player Installer...		0%	2.4 MB	0 MB/s	0 Mbps
Internet Explorer		0%	111.7 MB	0 MB/s	0 Mbps
Print driver host for applications		0%	1.0 MB	0 MB/s	0 Mbps
Runtime Broker		0%	12.0 MB	0 MB/s	0 Mbps
Synaptics Pointing Device Helper		0%	0.5 MB	0 MB/s	0 Mbps
Synaptics TouchPad Enhancem...		0%	2.1 MB	0 MB/s	0 Mbps
Windows processes (4)					
Client Server Runtime Process		0%	1.3 MB	0 MB/s	0 Mbps
Desktop Window Manager		0%	110.8 MB	0 MB/s	0 Mbps
Host Process for Windows Tasks		0%	5.1 MB	0 MB/s	0 Mbps

The Processes tab shows its information in columns. To help you differentiate between data values (that is, for data points that are low, medium, or high), Windows 8 uses a "heat map" paradigm. This type of display lets you look across columns and rows and data that represent different types of data (CPU, memory, disk, and network usages) and get a quick view of the data and see any hot spots in the values. For example, if memory usage for a process or application is high compared to other running processes or applications, the heat map shows a brighter orange color. Lower values are in lighter shades, such as light tan or light yellow. Microsoft designed these heat maps to allow users to visualize and digest the information quickly.

You can sort items by clicking any column heading. For example, you can click the Memory column to sort processes by the amount of memory each one takes up, in ascending order (smallest to largest) or descending order (largest to smallest). Seeing those in largest-to-smallest order lets you know which processes are using up the most memory.

Here's what each column shows:

- **CPU:** The percent of CPU resources that the process is currently using
- **Memory:** The amount of memory the process is currently using
- **Disks:** The amount of disk resources the process is currently using
- **Network:** The amount of network resources the process is currently using

Memory usage is probably the main cause of slow-running computers. The more stuff you cram into RAM, the more Windows has to use the paging file, and hence the slower everything goes. You can see which processes are hogging up the most RAM just by clicking the Memory column heading until the largest numbers are at the top of the list.

Showing other columns

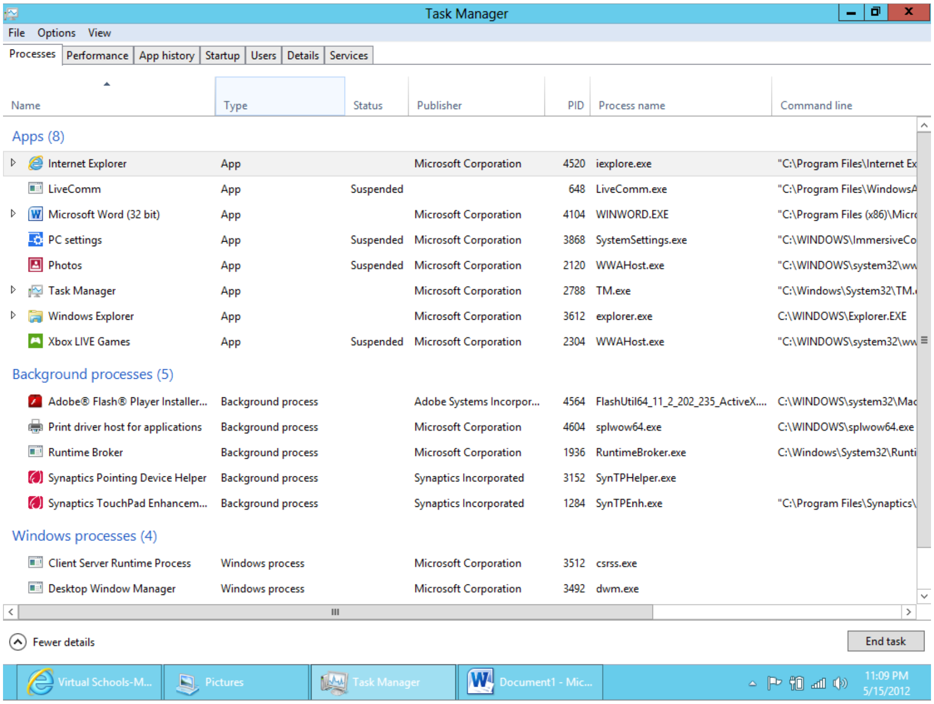
Windows 8 Task Manager provides additional columns of data that you can view on the Process tab. To see these columns, right-click on the column area. A menu appears with the names of the available columns, including the following ones that are not shown by default:

- **Type:** Displays the same information at the group type, such as App, Background Process, or Windows Process
- **Publisher:** Name of the company that produces the application
- **PID:** Process ID number, which is a unique number created by Windows for each process that is running.
- **Process Name:** Shows the executable name of the process
- **Command Line:** Shows the path to the source file of the process

Figure 42.12 shows what Task Manager looks like when you turn on all the columns. The information shown in the default columns (CPU, Memory, Disks, and Network) appears on the far right of Task Manager, and in this example the window is too wide to fit in this screen shot.

FIGURE 42.12

Processes tab with custom columns showing



Name	Type	Status	Publisher	PID	Process name	Command line
Apps (8)						
Internet Explorer	App		Microsoft Corporation	4520	iexplore.exe	"C:\Program Files\Internet Ex
LiveComm	App	Suspended		648	LiveComm.exe	"C:\Program Files\WindowsA
Microsoft Word (32 bit)	App		Microsoft Corporation	4104	WINWORD.EXE	"C:\Program Files (x86)\Micro
PC settings	App	Suspended	Microsoft Corporation	3868	SystemSettings.exe	"C:\WINDOWS\ImmersiveCo
Photos	App	Suspended	Microsoft Corporation	2120	WWAHost.exe	"C:\WINDOWS\system32\ww
Task Manager	App		Microsoft Corporation	2788	TM.exe	"C:\Windows\System32\TM.
Windows Explorer	App		Microsoft Corporation	3612	explorer.exe	C:\WINDOWS\Explorer.EXE
Xbox LIVE Games	App	Suspended	Microsoft Corporation	2304	WWAHost.exe	"C:\WINDOWS\system32\ww
Background processes (5)						
Adobe® Flash® Player Installer...	Background process		Adobe Systems Incorpor...	4564	FlashUtil64_11_2_202_235_ActiveX....	C:\WINDOWS\system32\Mac
Print driver host for applications	Background process		Microsoft Corporation	4604	splwow64.exe	C:\WINDOWS\splwow64.exe
Runtime Broker	Background process		Microsoft Corporation	1936	RuntimeBroker.exe	C:\Windows\System32\Runti
Synaptics Pointing Device Helper	Background process		Synaptics Incorporated	3152	SynTPHelper.exe	
Synaptics TouchPad Enhancem...	Background process		Synaptics Incorporated	1284	SynTPEnh.exe	"C:\Program Files\Synaptics\
Windows processes (4)						
Client Server Runtime Process	Windows process		Microsoft Corporation	3512	csrss.exe	
Desktop Window Manager	Windows process		Microsoft Corporation	3492	dwm.exe	

You can resize columns by dragging the separator line between the columns.

Common processes

You can end any running process by right-clicking its name and choosing End Task (or by clicking its name and clicking the End Task button). But doing so isn't a good idea unless you know exactly what service you're terminating. If a process represents a running program with unsaved work, ending the process will close the program without saving the work.

Some processes are required for normal operation of the computer. For example, Desktop Window Manager and Runtime Broker are important parts of Windows 8 so you definitely don't want to mess with those.

NOTE

Just because a process is near the top of the list when you sort things in largest-to-smallest order doesn't mean the biggest items are hogs or outrageously large. Even seemingly large numbers such as 50,000K and 60,000K are trivial when you consider how much RAM most systems have, and how cheap it is to add more.

If you're unsure about a process, you can search for it by name on Google, Bing, or any other search engine. Just be sure to check out multiple sources and read carefully. Virtually every resource you find will tell you that perfectly legitimate and necessary processes such as `dwm.exe` and `explorer.exe` could be a Trojan, spyware, or other malicious item. But *could* is not synonymous with is. So read carefully and don't assume the worst.

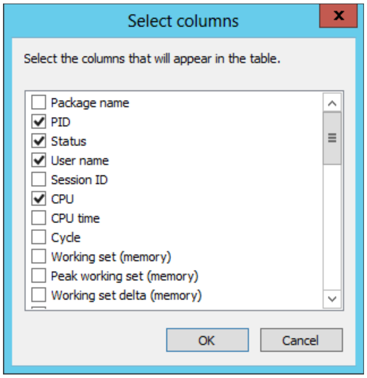
Choosing columns on the Details tab

The Details tab on Task Manager provides additional ways to analyze performance issues with running processes. The columns that display by default are Name, User Name, CPU, Memory, Status, and Description.

You can choose to display other columns here in case you need to capture different types of data about a particular problem you are having with a program or Windows in general. To choose other columns to view, right-click the column area and choose Select Columns. The Select Columns dialog box appears (as shown in Figure 42.13). Each column shows some detail of the process, mostly related to resource consumption. A programmer might use this information to fine-tune a program she's writing. Beyond that, it's hard to think of anything terribly practical to be gained from this information. But here's a quick summary of what the other, optional columns show:

FIGURE 42.13

Picking additional columns for the Details tab



Select the columns that will appear in the table.

☐ Package name
☑ PID
☑ Status
☑ User name
☐ Session ID
☑ CPU
☐ CPU time
☐ Cycle
☐ Working set (memory)
☐ Peak working set (memory)
☐ Working set delta (memory)

- **Base Priority:** The priority assigned to the process. When the CPU is busy, low-priority processes have to wait for normal and high-priority processes to be completed. To change a process's priority, right-click its name and choose Set Priority.
- **Command Line:** The command, with parameters, that was used to initiate the process.
- **CPU Time:** Total number of seconds of CPU time this process has used since starting. The number will be doubled for dual-processor systems, quadrupled for systems with four processors.
- **CPU:** The amount of processor time, as a percent of the whole, this process has used since first started (the CPU column).
- **Data Execution Prevention:** Specifies whether DEP is enabled or disabled for the specified process. DEP is a set of hardware and software technologies that help prevent malicious code from running by marking some areas of memory as non-executable.
- **Description:** A description of the process.
- **GDI Objects:** The number of Graphics Device Interface objects used by this process, since starting, to display content on the screen.
- **Handles:** The number of objects to which the process currently has handles.
- **I/O Other:** Non-disk input/output calls made by the object since it started. Excludes file, network, and device operations.
- **I/O Other Bytes:** The number of bytes transferred to devices since the process started. Excludes file, network, and device operations.
- **I/O Reads:** The number of file, network, and device Read input/output operations since the process started.
- **I/O Read Bytes:** The number of bytes transferred by Read file, network, and device input/output operations.
- **I/O Writes:** The number of file, network, and device Write input/output operations since the process started.
- **I/O Write Bytes:** The number of bytes transferred by Write file, network, and device input/output operations.
- **Image Path Name:** The path to the executable specified in the Image Name column.
- **Working Set Delta (Memory):** The amount of memory used by the process (also called the process's *working set*) since starting.
- **Peak Working Set (Memory):** The largest amount of physical memory used by the process since it started.

- **Working Set Delta (Memory):** The change in memory usage since the last Task Manager update.
- **Memory (Private Working Set):** Amount of memory allocated to the process's private data.
- **Commit Size:** The amount of virtual memory currently committed to the process.
- **Paged Pool:** The amount of system-allocated virtual memory that's been committed to the process by the operating system.
- **NP Pool:** The amount of physical RAM used by the process since starting.
- **Page Faults:** The number of times the process has read data from virtual memory since starting.
- **PF Delta:** The change in the number of page faults since the last Task Manager update.
- **PID:** A number assigned to the process at startup. The operating system accesses all processes by their numbers, not their names.
- **Session ID:** The Terminal Session ID that owns the process. Always zero unless Terminal Services are in use on the network.
- **Status:** Shows if the process is running or suspended.
- **Threads:** The number of threads running in a process.

TIP

A thread is a tiny sequence of instructions that the CPU must carry out to perform some task. Some programs divide tasks into separate threads that can be executed in parallel (simultaneously), to speed execution. This is called *multi-threaded execution*.

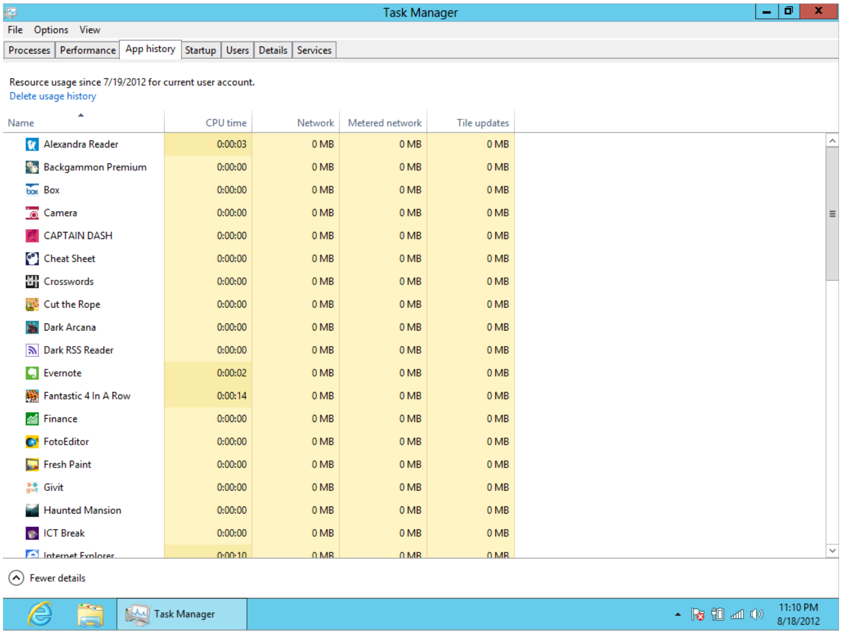
- **UAC Virtualization:** Specifies whether User Account Control (UAC) is virtualized for the specified process. When enabled, data is written to a user area rather than to a system area.
- **User Name:** The user, user account, or service that started the process.
- **User Objects:** The number of objects from Window Manager used by the object, including program windows, cursors, icons, and other objects.

App History tab

The new Windows 8 Task Manager includes the App History tab shown in Figure 42.14. This tab lists all the apps that you've used on this computer since a given time. By default, you can see history since the time you installed Windows 8. In actuality, you may want to click the Delete Usage History link periodically to remove all old app history. This will limit the amount of data Windows keeps stored in a log file somewhere on your hard drive.

FIGURE 42.14

App History tab in Task Manager


Task Manager
File
Options
View
Processes
Performance
App history
Startup
Users
Details
Services
Delete usage history
Fewer details
Task Manager
11:10 PM
8/18/2012

Resource usage since 7/19/2012 for current user account.

Name	CPU time	Network	Metered network	Tile updates
Alexandra Reader	0:00:03	0 MB	0 MB	0 MB
Backgammon Premium	0:00:00	0 MB	0 MB	0 MB
Box	0:00:00	0 MB	0 MB	0 MB
Camera	0:00:00	0 MB	0 MB	0 MB
CAPTAIN DASH	0:00:00	0 MB	0 MB	0 MB
Cheat Sheet	0:00:00	0 MB	0 MB	0 MB
Crosswords	0:00:00	0 MB	0 MB	0 MB
Cut the Rope	0:00:00	0 MB	0 MB	0 MB
Dark Arcana	0:00:00	0 MB	0 MB	0 MB
Dark RSS Reader	0:00:00	0 MB	0 MB	0 MB
Evernote	0:00:02	0 MB	0 MB	0 MB
Fantastic 4 In A Row	0:00:14	0 MB	0 MB	0 MB
Finance	0:00:00	0 MB	0 MB	0 MB
FotoEditor	0:00:00	0 MB	0 MB	0 MB
Fresh Paint	0:00:00	0 MB	0 MB	0 MB
Givit	0:00:00	0 MB	0 MB	0 MB
Haunted Mansion	0:00:00	0 MB	0 MB	0 MB
ICT Break	0:00:00	0 MB	0 MB	0 MB
Internet Explorer	0:00:10	0 MB	0 MB	0 MB

The columns available on the Apps History tab include the following:

- **Name:** The name of the app that has been used
- **CPU Time:** The amount of CPU time consumed by an app
- **Network:** The amount of network data utilized by an app
- **Metered Network:** The amount of metered network resources consumed by an app
- **Tile Updates:** The amount of resources used for updating Windows 8 app tile information
- **Non-Metered Network:** The amount of network data consumed by an app that is not considered metered data

- **Downloads:** The amount of data an app downloads from the Internet or other network resource
- **Uploads:** The amount of data an app uploads to a network resource

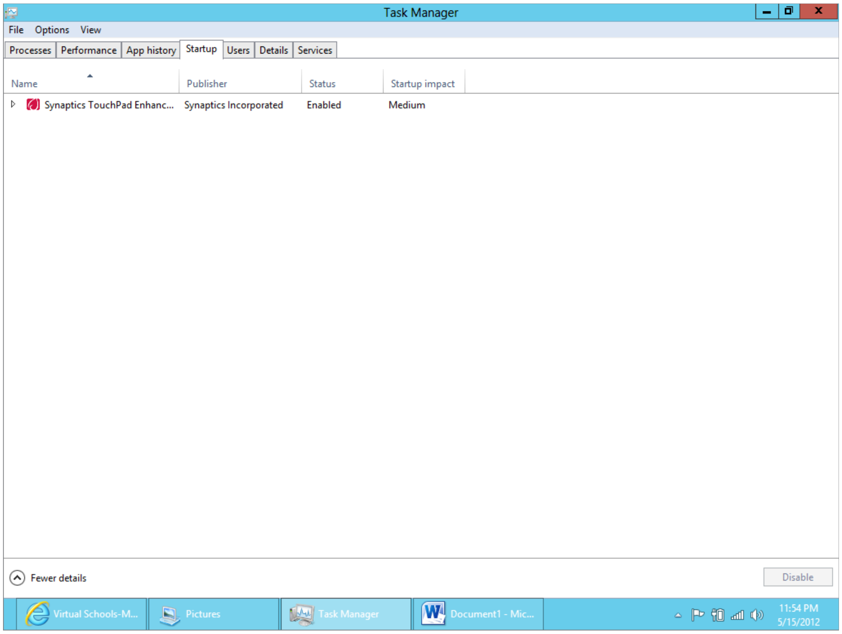
To launch an app or see related apps under a category of apps (look for an arrow to the left of a name), double-click the app name.

Startup tab

The Startup tab shows a list of the apps that start when you start Windows 8. Figure 42.15 shows an example of the Startup tab and the application that will start at boot up time. In this example, only one application will start when Windows starts.

FIGURE 42.15

Startup tab of Task Manager



Task Manager
File
Options
View
Processes
Performance
App history
Startup
Users
Details
Services
Fewer details
Disable
Virtual Schools-M...
Pictures
Task Manager
Document1 - Mic...
11:54 PM
5/15/2012

Name	Publisher	Status	Startup impact
Synaptics TouchPad Enhanc...	Synaptics Incorporated	Enabled	Medium

The columns on this tab include the following:

- **Name:** Name of the app that will start at boot time
- **Publisher:** Company that distributes the app
- **Status:** Lists either Enabled or Disabled depending on whether the app will (Enabled) or will not (Disabled) start at boot time

- **Startup Impact:** Shows a relative rating of the impact the app will have during boot time
- **Startup Type:** Shows the type of app that starts, such as one that is hidden (such as running from a registry key), or one that launches from the interface
- **Disk I/O At Startup:** Displays the amount of memory used at startup by the app
- **CPU At Startup:** Displays the amount of CPU resources used at startup by the app
- **Running Now:** Lists only those apps currently running under Windows
- **Disabled Time:** Lists the amount of time the app is disabled
- **Command Line:** Shows the hard drive path of the listed app

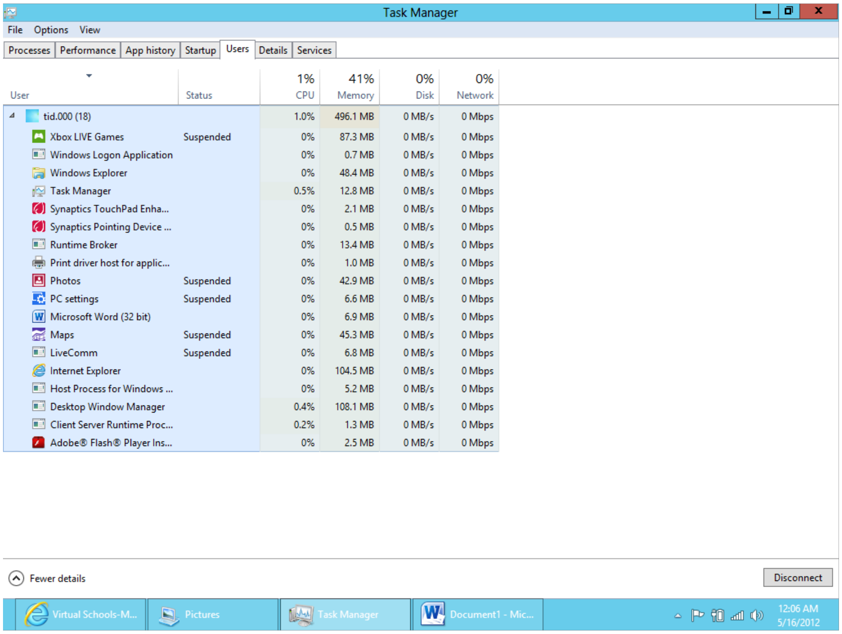
If you do not want the app to start at boot time, select it and then click the Disable button.

Users tab

The Users tab in Task Manager displays information about your user accounts. The Users tab (shown in Figure 42.16) shows the names of people currently logged in to the computer. Most users will see only themselves, even if other users are logged in.

FIGURE 42.16

Users tab of Task Manager



User	Status	1% CPU	41% Memory	0% Disk	0% Network
tid.000 (18)		1.0%	496.1 MB	0 MB/s	0 Mbps
Xbox LIVE Games	Suspended	0%	87.3 MB	0 MB/s	0 Mbps
Windows Logon Application		0%	0.7 MB	0 MB/s	0 Mbps
Windows Explorer		0%	48.4 MB	0 MB/s	0 Mbps
Task Manager		0.5%	12.8 MB	0 MB/s	0 Mbps
Synaptics TouchPad Enha...		0%	2.1 MB	0 MB/s	0 Mbps
Synaptics Pointing Device ...		0%	0.5 MB	0 MB/s	0 Mbps
Runtime Broker		0%	13.4 MB	0 MB/s	0 Mbps
Print driver host for applic...		0%	1.0 MB	0 MB/s	0 Mbps
Photos	Suspended	0%	42.9 MB	0 MB/s	0 Mbps
PC settings	Suspended	0%	6.6 MB	0 MB/s	0 Mbps
Microsoft Word (32 bit)		0%	6.9 MB	0 MB/s	0 Mbps
Maps	Suspended	0%	45.3 MB	0 MB/s	0 Mbps
LiveComm	Suspended	0%	6.8 MB	0 MB/s	0 Mbps
Internet Explorer		0%	104.5 MB	0 MB/s	0 Mbps
Host Process for Windows ...		0%	5.2 MB	0 MB/s	0 Mbps
Desktop Window Manager		0.4%	108.1 MB	0 MB/s	0 Mbps
Client Server Runtime Proc...		0.2%	1.3 MB	0 MB/s	0 Mbps
Adobe® Flash® Player Ins...		0%	2.5 MB	0 MB/s	0 Mbps

If your system is running slowly because users are not logging out of their accounts, you can send a message to those users asking them to log off when done using the computer. Click a username and click Disconnect to disconnect that user. Any unsaved data will be lost. In general, this is a bad idea, so try to get the user to log off normally before taking this action.

To see the apps and processes that a user uses, double-click the username. Figure 42.16, for example, shows the apps listed under the tid.000 user.

The Users tab includes the following columns:

- **ID:** Shows a unique integer for each user signed on to the computer
- **Session:** Displays the type of session, including console or remote
- **Client name:** Shows the name of a computer ("client") connected to your computer
- **User:** Name of the user logged into the computer
- **Status:** Shows if an app is suspended or disabled
- **CPU:** Amount of CPU a user is using
- **Memory:** Amount of RAM a user is using
- **Disk:** Amount of disk resources a user is using
- **Network:** Amount of network resources a user is using

Services tab

The Services tab provides a view of the services running under Windows. This tab is discussed in more detail in Chapter 15, "Customizing Startup Options."

Wrap-Up

A new Task Manager is available in Windows 8. Task Manager is a handy tool for terminating hung programs (programs that are not responding) and for monitoring computer resource usage. Task Manager also provides detailed information that's of interest only to programmers and network administrators. The following are the main things to remember about Task Manager:

- To open Task Manager, press Ctrl+Alt+Del and click Start Task Manager, or right-click the time and choose Start Task Manager.
- The Processes tab shows the names of all running applications. To end a program that's not responding, right-click its name and choose End Task.

- To see which process an application relates to, right-click the application name and choose Go To Details.
- The Processes tab shows all running processes, including application programs, background programs such as antivirus software, and operating system processes.
- The Performance tab presents a bird's-eye view of overall CPU and memory usage.
- The Users tab shows which users are currently logged in.

CHAPTER 43

Troubleshooting Software Problems

IN THIS CHAPTER

- Troubleshooting installations
- Troubleshooting programs
- Researching application errors
- Editing the Windows Registry

Troubleshooting Installation

Most programs designed for Windows 7 (and possibly Windows Vista) will work with Windows 8. However, not all programs that were designed for Windows XP (or earlier versions of Windows) will work with Windows 8. In fact, you should avoid installing utility and security programs unless they are specifically written for Windows 8. (Most basic application programs will run fine.)

If you can't get an older program to install, or it doesn't work after you install it, check the program manufacturer's website to see if a Windows 8 version is available. Or, use the methods discussed in Chapter 39 to configure settings that might enable the older program to run on Windows 8. Or, consider installing and using Windows XP Mode with Windows Virtual PC to run the application. If these steps fail, you can take some general troubleshooting steps to get the program working properly.

Troubleshooting Programs

Because so many programs are available for Windows, no troubleshooting magic bullets exist that will solve all problems. Every program and every problem is unique.

One of the most common mistakes users make is that they don't invest the necessary time in learning how to use a program. They guess and hack their way through it, and when things don't work the way they hoped, they think there's something wrong with the program, when in fact, the problem is that the person using the program has no clue how to use it correctly. Troubleshooting can't fix ignorance; only learning can fix that.

Every program has its own built-in Help feature for a reason — because every program is unique. The only ways to get information about a specific program are from the Help that came with that program, or from the support website for that program. The Help feature, which is usually the last item on a menu bar or tab, provides all the help options available to you.

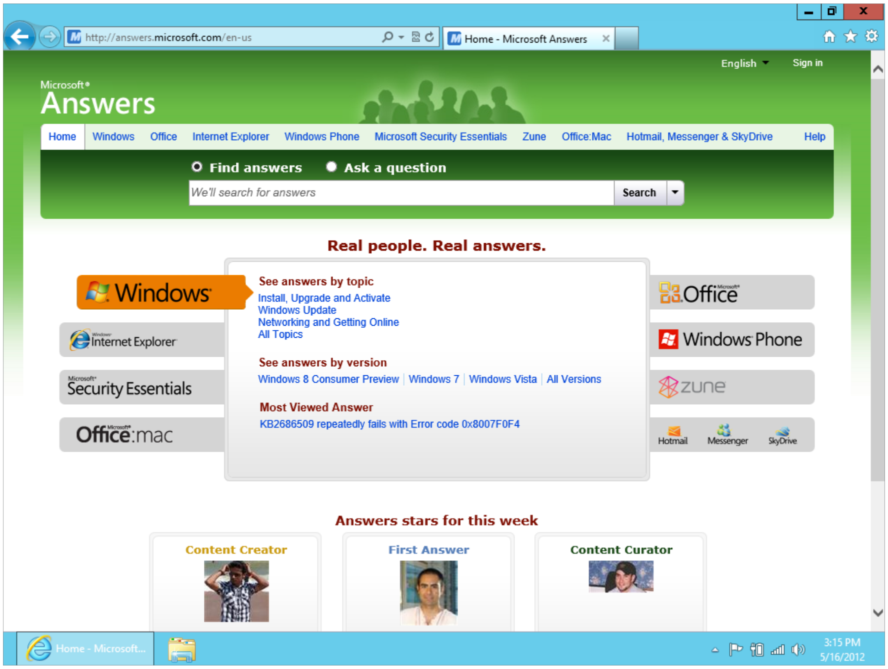
The whole concept of troubleshooting applies only when you *do* know how to do something, but things aren't working the way the documentation says they should.

The trick is to explore a number of different avenues for help. There is no book, web page, person, place, or thing that has all the answers to all questions, nor the solutions to all problems. Sometimes you really have to dig around for a solution. Start with the narrowest, most simple solution and work your way out from there, as follows:

- Try the Help that's available from the program's menu bar or tab.
- Try the program manufacturer's website. You may want to try searching `www.bing.com`, `http://support.microsoft.com`, or `http://office.microsoft.com` for Microsoft Office products. At the program manufacturer's website, look around for other support options such as FAQs (Frequently Asked Questions), troubleshooting information, and discussion groups or newsgroups.
- For Microsoft products, you'll also want to go to `http://support.microsoft.com` and click a product link for links to support for specific products. A great resource for Microsoft products is the Microsoft Answers website (as shown in Figure 43.1) at `http://answers.microsoft.com`. This page takes you to areas for specific products where you can post questions and get answers.

FIGURE 43.1

Microsoft Answers website


http://answers.microsoft.com/en-us
Home - Microsoft Answers
English
Sign in
Microsoft
Answers
Home
Windows
Office
Internet Explorer
Windows Phone
Microsoft Security Essentials
Zune
Office:Mac
Hotmail, Messenger & SkyDrive
Help
Find answers
Ask a question
We'll search for answers
Search
Real people. Real answers.
Windows
Internet Explorer
Security Essentials
Office:mac
See answers by topic
Install, Upgrade and Activate
Windows Update
Networking and Getting Online
All Topics
See answers by version
Windows 8 Consumer Preview | Windows 7 | Windows Vista | All Versions
Most Viewed Answer
KB2686509 repeatedly fails with Error code 0x8007F0F4
Office
Windows Phone
zune
Hotmail
Messenger
SkyDrive
Answers stars for this week
Content Creator
First Answer
Content Curator
Home - Microsoft...
3:15 PM
5/16/2012

Don't forget, too, that you can search the entire planet using a search engine like Google or Bing. However, when you're searching the entire planet, you want to use as many exact, descriptive words as possible in your search. Otherwise, you'll get links to more pages than you could visit in a lifetime. Include the product name, version number, and specific words that describe what you're looking for.

TIP

To find out what version of a program you're using, choose the program's Help ⇨ About command. On newer programs, the About information sometimes can be located by choosing the File tab and then clicking Help. Or, you can also check the version in the Control Panel. Open the Control Panel, click Programs, and click Programs And Features. The Version column shows the program version.

When searching the web, use specific keywords and skip the noise words like "how." For example, if you're looking for help with Windows Mail backups, get all of the appropriate words into your search, as in `Backup Windows Mail`. To find specific phrases, enclose the phrase in quotes. Be as specific as you can possibly be. The more specific you are when typing your search words, the better your results will be.

NOTE

We would be lost without Google. When our team experiences a problem with a server for which we don't have a ready fix, invariably the first place we turn is Google. We're not alone in that. Even some auto repair shops search Google to find the probable cause for engine lights that come on.

Researching Application Errors

Many software errors provide hexadecimal memory locations in their error messages. Sometimes, searching for the number won't do any good. The title bar may provide some clues as to exactly what caused the problem. Look through the error messages for some unique keywords that you can enter into different support search engines.

Searching for a combination of the program name and keywords from the error message text can sometimes provide clues. You may want to start with a narrow search, such as `http://support.microsoft.com`, to avoid getting too many hits. If that doesn't work, you can broaden the search to all of Microsoft.com (`www.bing.com`). If all else fails, you can search all five billion (or so) pages in Google's index at `www.google.com`.

But the key thing, in all searches, is to get the most unique words from the message into your search string. For example, if searching for the hexadecimal memory addresses from the error message doesn't return useful results, you could try a combination of other words. If you keep getting results that are clearly not germane, such as pages about UNIX system problems when you're searching for a Windows issue, preface the keyword you want exclude with a minus sign. For example, searching Google using `Windows 8 backup restore -UNIX -Linux` returns for a list of pages that contain the words `Windows`, `8`, `backup`, and `restore`, but not pages that also include the words `UNIX` or `Linux`.

Ideally, you'll want to try to dig up as much information about the error as you can via the web. Search the company's website; because they are the ones who created that application, they may be able to provide additional information.

Editing the Registry

After researching a software problem, you might find that the solution involves a "Registry hack," also known as *editing the Windows Registry*. This is serious business with little margin for error. Never attempt to fix a problem by guessing at a Registry hack. When you do get specific instructions on making a registry change, make sure you make *exactly* the change indicated in the message. Even the slightest typographical error can cause a world of problems. If you're not a technical person and don't want to risk creating a really big mess you can't rectify, consider hiring a professional to resolve the problem.

Before you launch into Registry hacking, you need to understand what you're doing. First, be aware that the Registry is a database where Windows and other programs store data that they need to operate properly on your computer. The average computer user typically doesn't need to know that the Registry exists. In fact, we're sure most do not. There is absolutely nothing that's user friendly about the Registry. In fact, it's probably just about as user hostile as you can get. Microsoft provides the Registry Editor described in this chapter because programmers and other IT professionals occasionally need to view or modify registry entries.

CAUTION

The Windows Registry is not a safe place to mess around. Pay attention to all cautions in this chapter!

How registry data is organized

The Windows Registry comprises several *hives*, each of which holds specific types of data. Within each hive, the registry uses *keys* and *subkeys* to organize data. Just as a folder can contain subfolders, a key can contain subkeys.

The Registry doesn't store files or documents, however. Rather, it stores *values*. Some of these values make sense to the average user, but some do not. For example, if you have Microsoft Office 2010 installed, there is a value in the Registry that stores the path to the Office installation folder, and the value is typically `C:\Program Files\Microsoft Office\Office14\`. That's easy to understand. However, you'll also find a lot of values in the Registry that look something like `{89820200-ECBD-11cf-8B85-00AA005B4383}!8,0,7100,0`, and it's highly unlikely that this value will mean anything to you. But whether the value of a given Registry entry makes sense to you, it makes sense to the application that is using the value, and that value must be entered exactly as required.

Hives, keys, and subkeys

We get into the specifics of editing the Registry in a moment. But first, Figure 43.2 shows an example of the Registry Editor as it might look when you first open it. The names listed down the left column are hives. As defined by Microsoft, a *hive* is a logical group of keys, subkeys, and values in the registry that has a set of supporting files containing backups of its data. So, each hive contains keys, subkeys, and data. Each hive stores a particular type of information, as summarized in Table 43.1. Note that most keys have a standard abbreviation, such as `HKCU` for `HKEY_CURRENT_USER`.

TIP

To open Registry Editor, press Windows+X, click Run, type regedit, and press Enter. You also can display the Charms Bar, choose Search, and type regedit. Click `Regedit.exe` on the Apps screen.

FIGURE 43.2

Standard hives at left in the Registry Editor

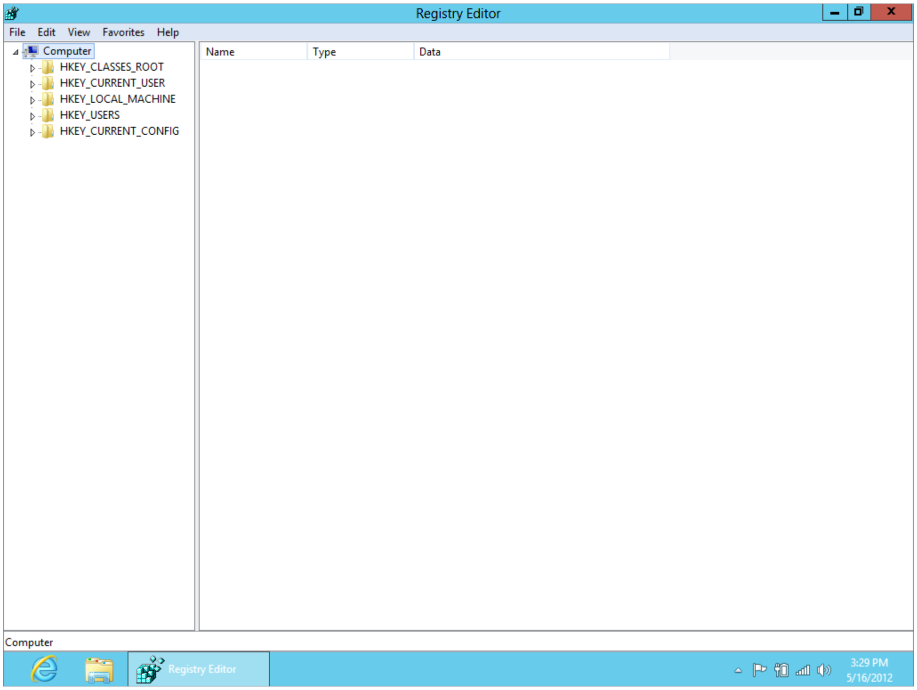

Registry Editor
File
Edit
View
Favorites
Help
Computer
HKEY_CLASSES_ROOT
HKEY_CURRENT_USER
HKEY_LOCAL_MACHINE
HKEY_USERS
HKEY_CURRENT_CONFIG
Name
Type
Data
Computer
Registry Editor
3:29 PM
5/16/2012

TABLE 43.1 Standard Root Keys

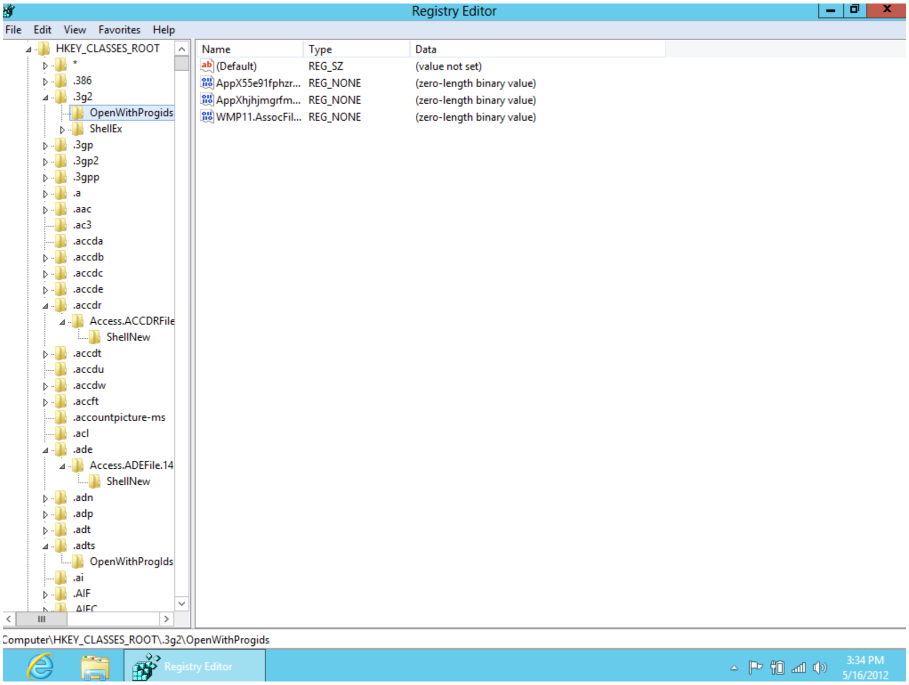
Name	Abbreviation	Description
`HKEY_CLASSES_ROOT`	`HKCR`	Stores information about document types and extensions, registered programs that can open each file type, the default program for each file type, and options that appear when you right-click an icon.
`HKEY_CURRENT_USER`	`HKCU`	Stores information about the person who is currently using the computer, based on which user account that person is logged in to, and settings that particular user chose within his or her account.

Name	Abbreviation	Description
`HKEY_LOCAL_MACHINE`	`HKLM`	Stores information about all the hardware that's available to the computer, including devices that might not be plugged in at the moment.
`HKEY_USERS`	`HKU`	Stores information about all users, based on user accounts you've defined via the Control Panel.
`HKEY_CURRENT_CONFIG`	`N/A`	Similar to `HKEY_LOCAL_MACHINE`, this key stores information about hardware available to the computer. However, this key limits its storage to hardware that's connected and functioning currently.

When you click the white triangle next to a hive, it expands to display its keys. Most of the keys have subkeys, and those subkeys might also have subkeys of their own. In that case, the subkey itself has a white triangle, too, which you can click to see another level of subkeys. For example, in Figure 43.3, the `HKEY_CLASSES_ROOT` key is expanded to reveal its subkeys. Each subkey represents a particular file type in that case. A few subkeys are also expanded in this example.

FIGURE 43.3

The HKEY_CLASSES_ROOT and some subkeys expanded


Registry Editor
File
Edit
View
Favorites
Help
HKEY_CLASSES_ROOT
*
.386
.3g2
OpenWithProgids
ShellEx
.3gp
.3gp2
.3gpp
.a
.aac
.ac3
.accda
.accdb
.accdc
.accde
.accdr
Access.ACCDRFile
ShellNew
.accdt
.accdu
.accdw
.accft
.accountpicture-ms
.acl
.ade
Access.ADEFile.14
ShellNew
.adn
.adp
.adt
.adts
OpenWithProgIds
.ai
.AIF
.AIFC
Registry Editor
3:34 PM
5/16/2012

Name	Type	Data
(Default)	REG_SZ	(value not set)
AppX55e91fphzr...	REG_NONE	(zero-length binary value)
AppXhjhjmgrfm...	REG_NONE	(zero-length binary value)
WMP11.AssocFil...	REG_NONE	(zero-length binary value)

Computer\HKEY_CLASSES_ROOT\.3g2\OpenWithProgids

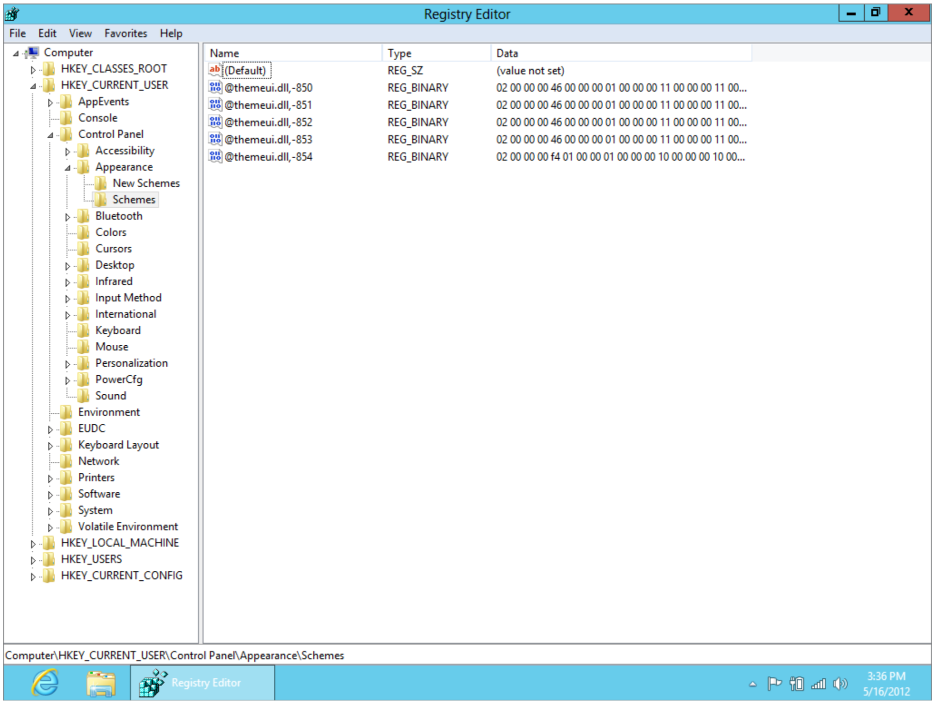
Often, a reference to a specific subkey is expressed as a path, in much the same way that a file's location and name are expressed as a path. For example, the path to a file might be expressed as `C:\Users\rtidrow\Pictures\Summit01.jpg`. The path tells Windows exactly where to find the file `Summit01.jpg` in my Pictures folder.

A registry path is the same idea, and even uses backslashes to separate the key and subkey names. For example, the highlighted subkey in Figure 43.3 is at `Computer\HKEY_CLASSES_ROOT\.3g2\OpenWithProgIds`.

Sometimes you'll see instructions telling you the path to a key or subkey, as in `HKEY_CURRENT_USER\Control Panel\Appearance\Schemes`. You have to manually expand each folder down the path to get to the subkey. Figure 43.4 shows the result of following that sample path. The values in the Data column for that key are mostly binary numbers — a good example of just how user *un*friendly the registry can be!

FIGURE 43.4

The HKEY_CURRENT_USER\Control Panel\Appearance\Schemes subkey selected


Registry Editor
File
Edit
View
Favorites
Help
Computer
HKEY_CLASSES_ROOT
HKEY_CURRENT_USER
AppEvents
Console
Control Panel
Accessibility
Appearance
New Schemes
Schemes
Bluetooth
Colors
Cursors
Desktop
Infrared
Input Method
International
Keyboard
Mouse
Personalization
PowerCfg
Sound
Environment
EUDC
Keyboard Layout
Network
Printers
Software
System
Volatile Environment
HKEY_LOCAL_MACHINE
HKEY_USERS
HKEY_CURRENT_CONFIG
Registry Editor
3:36 PM
5/16/2012

Name	Type	Data
(Default)	REG_SZ	(value not set)
@themeui.dll,-850	REG_BINARY	02 00 00 00 46 00 00 00 01 00 00 00 11 00 00 00 11 00...
@themeui.dll,-851	REG_BINARY	02 00 00 00 46 00 00 00 01 00 00 00 11 00 00 00 11 00...
@themeui.dll,-852	REG_BINARY	02 00 00 00 46 00 00 00 01 00 00 00 11 00 00 00 11 00...
@themeui.dll,-853	REG_BINARY	02 00 00 00 46 00 00 00 01 00 00 00 11 00 00 00 11 00...
@themeui.dll,-854	REG_BINARY	02 00 00 00 f4 01 00 00 01 00 00 00 10 00 00 00 10 00...

Computer\HKEY_CURRENT_USER\Control Panel\Appearance\Schemes

Key values

The data stored in a subkey is called a *value*. The value is a specific piece of information that can be stored as a string (text) or a number. However, the terms “string” and “number” don’t tell the whole story because those types can be further broken down into the specific *data types* listed in Table 43.2.

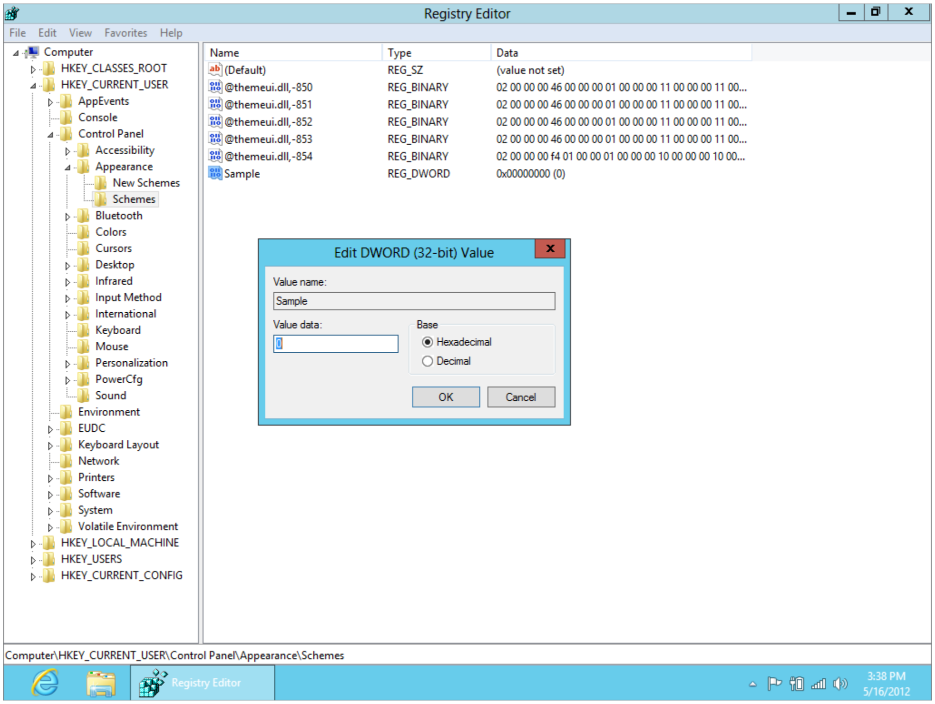
TABLE 43.2 **Registry Value Data Types**

Name	Data Type	Description
Binary value	`REG_BINARY`	Raw binary data used mostly by hardware components. Often displayed in hexadecimal format.
DWORD value	`REG_DWORD`	An integer often used to store parameters for device drivers and services. Subtypes include related types such as `DWORD_LITTLE_ENDIAN` and `REG_DWORD_BIG_ENDIAN` with the least significant bit at the lowest/highest address, respectively.
Expandable string value	`REG_EXPAND_SZ`	A variable-length string often used to store data for application programs and services.
Multistring value	`REG_MULTI_SZ`	A string that actually consists of multiple substrings separated by spaces, commas, or other special characters.
String value	`REG_SZ`	A simple fixed-length text string.
Binary value	`REG_RESOURCE_LIST`	A series of nested arrays (lists) often used by hardware and device drivers. Usually displayed in hexadecimal.
Binary value	`REG_RESOURCE_REQUIREMENTS_LIST`	A series of nested arrays (lists) containing a device driver’s hardware resources, displayed in hexadecimal.
Binary value	`REG_FULL_RESOURCE_DESCRIPTOR`	A series of nested lists of actual hardware device capabilities, usually displayed in hexadecimal.
None	`REG_NONE`	Data with no particular type that’s displayed as a binary value in hexadecimal.
Link	`REG_LINK`	A string naming a symbolic link.
QWORD value	`REG_QWORD`	A 64-bit number displayed as a binary value.

In the vast majority of situations, you’ll be working with strings, DWORDs, or QWORDs when you create or modify registry entries. Entering a string in the registry is just like entering a string in a text box. When you enter DWORD and QWORD values, however, you enter those either as a decimal or a hexadecimal value. We won't go into detail about the differences here, and if you want a clearer understanding of hexadecimal numbering, a quick search on the web will turn up lots of explanations and examples. Just keep in mind that when you edit a DWORD or QWORD value, you need to choose the option that matches the value you are entering. Figure 43.5 shows an example of a value entered as a decimal number.

FIGURE 43.5

The Edit DWORD (32-bit) Value dialog box


Registry Editor
File
Edit
View
Favorites
Help
Computer
HKEY_CLASSES_ROOT
HKEY_CURRENT_USER
AppEvents
Console
Control Panel
Accessibility
Appearance
New Schemes
Schemes
Bluetooth
Colors
Cursors
Desktop
Infrared
Input Method
International
Keyboard
Mouse
Personalization
PowerCfg
Sound
Environment
EUDC
Keyboard Layout
Network
Printers
Software
System
Volatile Environment
HKEY_LOCAL_MACHINE
HKEY_USERS
HKEY_CURRENT_CONFIG
Edit DWORD (32-bit) Value
OK
Cancel
Registry Editor
3:38 PM
5/16/2012

Name	Type	Data
(Default)	REG_SZ	(value not set)
@themeui.dll,-850	REG_BINARY	02 00 00 00 46 00 00 00 01 00 00 00 11 00 00 00 11 00...
@themeui.dll,-851	REG_BINARY	02 00 00 00 46 00 00 00 01 00 00 00 11 00 00 00 11 00...
@themeui.dll,-852	REG_BINARY	02 00 00 00 46 00 00 00 01 00 00 00 11 00 00 00 11 00...
@themeui.dll,-853	REG_BINARY	02 00 00 00 46 00 00 00 01 00 00 00 11 00 00 00 11 00...
@themeui.dll,-854	REG_BINARY	02 00 00 00 f4 01 00 00 01 00 00 00 10 00 00 00 10 00...
Sample	REG_DWORD	0x00000000 (0)

Value name: Sample

Value data: 0

Base

● Hexadecimal

○ Decimal

Computer\HKEY_CURRENT_USER\Control Panel\Appearance\Schemes

If the troubleshooting steps that you are using direct you to enter a decimal value, click the Decimal option and then type the value specified. If you need to enter a hexadecimal value, click the Hexadecimal option before you type the value.

Backing up the registry

Every time you start your computer, Windows automatically creates the registry based on the hardware and software available to it. Then, it makes a backup copy of that registry. When you plan to manually change the registry, you should also make a backup copy of the registry just before you make your change. When it comes to editing the registry, there is no margin for error and even a tiny typographical error can have far-reaching, unpleasant consequences.

TIP

The System Restore feature described in Chapter 31 also makes periodic backup copies of the registry.

You need administrative privileges to edit the registry. The program you use is named regedit. You can start it using either of these methods:

- Show the Charms Bar, click Search, type **regedit**, and click `regedit.exe` on the Apps screen.
- Press Windows+X, choose Run, type **regedit**, and press Enter.

The Registry Editor opens. You *always* want to make a backup of the registry before you change anything. It's easy to do:

1. Choose File ➪ Export from the menu bar in the Registry Editor.
2. Choose a folder and enter a filename of your own choosing.
3. To export the entire registry, choose All under the Export Range heading.
4. Click the Save button.

That's it. In the event of a disaster, you can choose File ➪ Import from the Registry Editor's menu bar to restore all the entries you copied in the preceding steps.

Making the registry change

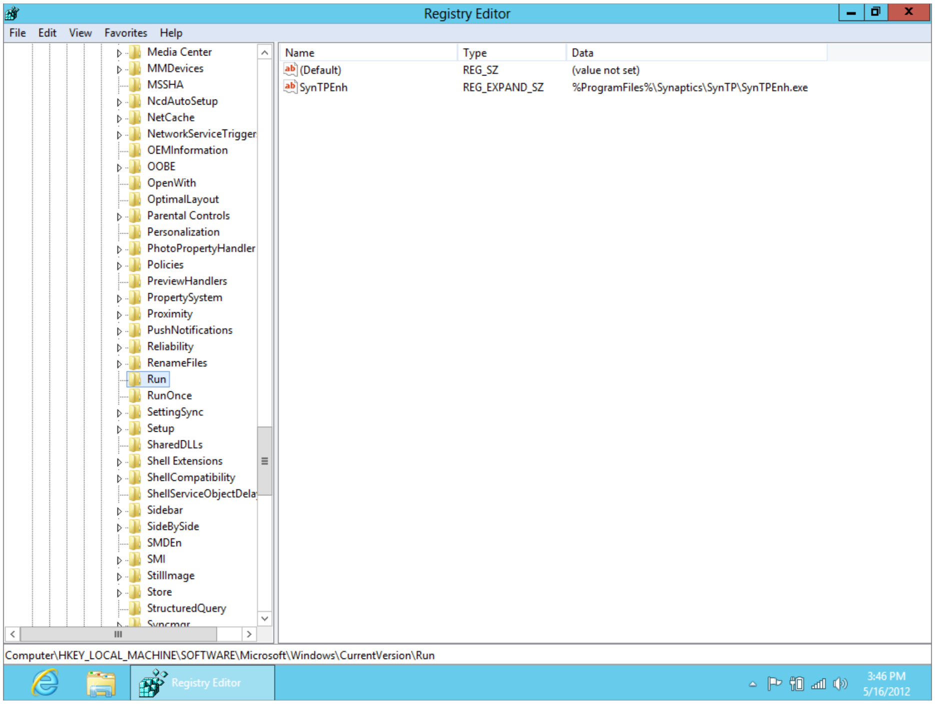
You can change any value in the registry. First, you need to get to the appropriate subkey. For example, let's say that you've found the solution to some problem via Microsoft's website. Part of that solution involves changing a value in the following subkey:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run
```

The first step is to get to the subkey by expanding the `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion` node. Then click Run. The pane to the right shows values in the subkey. The status bar shows the complete path name, as in Figure 43.6.

FIGURE 43.6

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run selected


Registry Editor
File
Edit
View
Favorites
Help
Media Center
MMDevices
MSSHA
NcdAutoSetup
NetCache
NetworkServiceTrigger
OEMInformation
OOBE
OpenWith
OptimalLayout
Parental Controls
Personalization
PhotoPropertyHandler
Policies
PreviewHandlers
PropertySystem
Proximity
PushNotifications
Reliability
RenameFiles
Run
RunOnce
SettingSync
Setup
SharedDLLs
Shell Extensions
ShellCompatibility
ShellServiceObjectDela
Sidebar
SideBySide
SMDEn
SMI
StillImage
Store
StructuredQuery
Syncmgr
Registry Editor
3:46 PM
5/16/2012

Name	Type	Data
(Default)	REG_SZ	(value not set)
SynTPEnh	REG_EXPAND_SZ	%ProgramFiles%\Synaptics\SynTP\SynTPEnh.exe

Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run

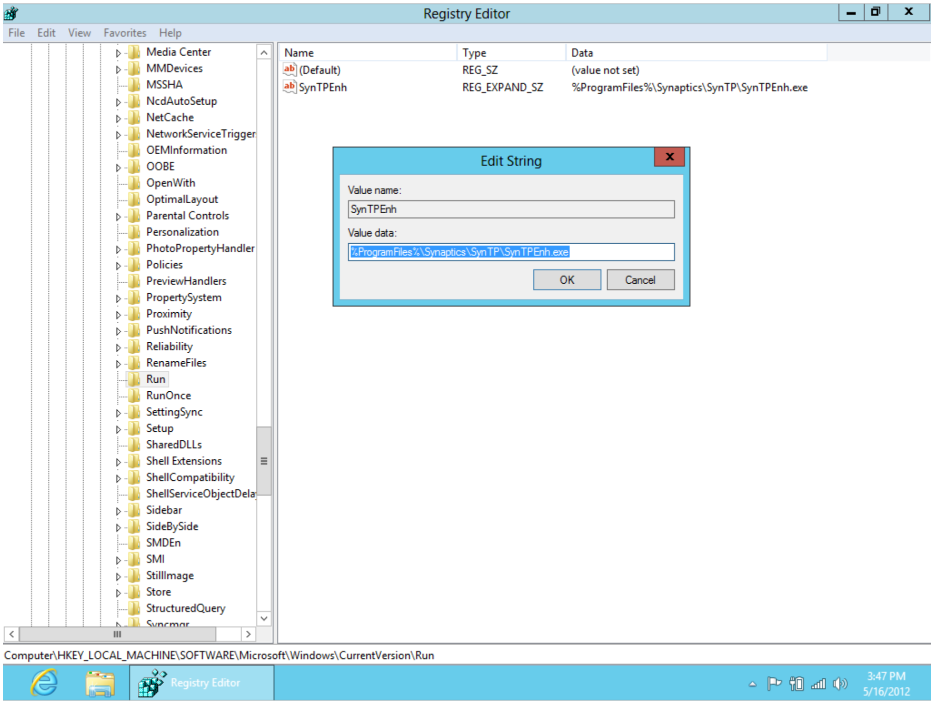
To change a subkey's value, double-click that value. A dialog box opens, allowing you to make a change. The appearance of the dialog box depends on the type of value you're editing. Figure 43.7 shows a general example.

CAUTION

Make sure you get to the correct key, and make *exactly* the change your instructions tell you to. Even the slightest mistake here could cause big problems down the road.

FIGURE 43.7

Dialog box to edit a string value


Registry Editor
File Edit View Favorites Help
Media Center
MMDevices
MSSHA
NcdAutoSetup
NetCache
NetworkServiceTrigger
OEMInformation
OOBE
OpenWith
OptimalLayout
Parental Controls
Personalization
PhotoPropertyHandler
Policies
PreviewHandlers
PropertySystem
Proximity
PushNotifications
Reliability
RenameFiles
Run
RunOnce
SettingSync
Setup
SharedDLLs
Shell Extensions
ShellCompatibility
ShellServiceObjectDela
Sidebar
SideBySide
SMDEn
SMI
StillImage
Store
StructuredQuery
Syncmgr
Edit String
OK
Cancel
Registry Editor
3:47 PM
5/16/2012

Name	Type	Data
(Default)	REG_SZ	(value not set)
SynTPEnh	REG_EXPAND_SZ	%ProgramFiles%\Synaptics\SynTP\SynTPEnh.exe

Value name: SynTPEnh

Value data: %ProgramFiles%\Synaptics\SynTP\SynTPEnh.exe

Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run

The Value Data box contains the value you can edit. Make your change there and click OK. Then close the Registry Editor. You have finished making your registry change.

Whether you see any change on the screen depends on the value you changed. Many registry hacks have no effect until you restart the computer.

If it turns out that you created more problems than you solved, you can restore your registry from the backup you made. Open the Registry Editor and choose File ➪ Import to import the backed-up registry file. Otherwise, if all seems well, you can delete the backed-up registry file.

Troubleshooting Tips

One important approach will help ensure your troubleshooting success: You *must* be methodical.

Don't start changing program settings, Windows settings, or registry settings; deleting files; and taking other actions without an understanding of what you're doing. Just as important, don't make lots of changes at once. Instead, make a single change, see if it fixes the problem, and then try the next if needed.

Here are some key pieces of advice:

- When searching the web for answers, be as precise as possible. Include as many keywords as possible that are related to the issue. If you are receiving an error message, enclose the exact error message in quotes in your search.
- Ask yourself what has changed. Did you add something new? Did you change a setting? Knowing when the problem started occurring and what changes happened right before it began could give you a great head start on finding the solution.
- Make one change at a time, testing the problem after each change to see if it is resolved.
- Keep notes. As you make a change or test something, make a note of it so you'll know what you changed and when.
- Don't be surprised to find that what appears to be a single problem is actually multiple problems.
- Use restore points to restore your system to the state it was in just prior to when the problem started occurring.
- Make backups of your critical data before you make any drastic changes.
- Make backup copies of the registry key in which you are about to make changes before you make those changes.

TIP

For more help with troubleshooting programs, search Windows Help and Support or post a question in the appropriate area online at Microsoft Communities.

Wrap Up

As you work in Windows 8, you will notice that some older programs run better than others. Generally speaking, programs designed for Windows 7 will work with Windows 8. You may find, however, not all programs that were designed for Windows XP or earlier versions of Windows will work with Windows 8. This chapter discussed how to troubleshoot software problems in Windows 8.

Specifically this chapter discussed:

- How to troubleshoot problems that may occur during software installations.
- How to troubleshoot problems with programs running under Windows 8.
- How to researching application errors that occur under Windows 8.
- How to edit the Windows Registry.

Part IX

Hardware and Performance Tuning

IN THIS PART

Chapter 44
Installing and Removing Hardware

Chapter 45
Using Wireless Bluetooth Devices

Chapter 46
Syncing Devices

Chapter 47
Performance Tuning Your System

Chapter 48
Troubleshooting Hardware and Performance

CHAPTER 44

Installing and Removing Hardware

IN THIS CHAPTER

- Using hot-pluggable devices
- Disconnecting hot-pluggable devices
- Installing not-so-hot-pluggable devices
- Removing hardware devices

A typical computer consists of hardware, firmware, and software. These three components work together to make the computer both usable and useful. This chapter will help you understand each of these with a focus on installing and removing hardware in Windows 8.

Before jumping into hardware-related tasks, take a quick look at just what hardware, firmware, and software really are.

Hardware, Firmware, and Software Demystified

Hardware is any physical device used by the computer, whether internal to the computer (such as the CPU on the computer's motherboard) or attached externally to the computer. A discrete hardware component that performs a given function is generally referred to as a *hardware device* or just *device* for short. You can use numerous types of hardware devices with a computer. Printers, scanners, mice, keyboards, monitors, disk drives, digital cameras, iPods, MP3 players, modems, and routers are all examples of hardware devices.

Before we describe firmware, it helps to get a better understanding of *software*. Software is program code that is written to perform a given function. For example, all of the program code that makes up WordPad is software. Likewise, all of the program code that constitutes Windows 8 is software.

Device drivers are also software. A device driver is a program that serves as an intermediary between a piece of hardware and an application or the operating system. For example, a display driver enables Windows 8 to communicate with and control your computer's display. Likewise, a printer driver enables Windows 8 to communicate with and control a printer.

Firmware is also software, in the context that it is program code. The difference is in how the program code is stored. *Firmware* is program code stored in a hardware device, typically in read-only memory. For example, the program code that makes your Apple iPad or your digital camera work is firmware.

Generally, as a typical Windows 8 user, you deal with firmware only when updating firmware on your removable devices, such as MP3 players. You will be adding device drivers and working with Windows updates much more so than you will with firmware.

A Few Words About Device Drivers

As indicated in the previous section, device drivers enable the Windows operating system to communicate with and control devices. Although Windows 8 comes with a very large number of device drivers for a wide range of devices, most device drivers are written and distributed by the manufacturers of a given device. For example, your video adapter's device driver was written by the company that designed and manufactured the adapter.

Device drivers are very much device-specific. That is, a device driver written for one device won't work for a different type of device. For that reason, make sure you have the necessary device driver(s) for a device before you install it. If you have just purchased a new device that requires a device driver not included with Windows, that driver will be included with the new device, typically on a CD or available for download on the manufacturer's website. Because the version of the device driver was developed specifically for the device, you don't have to obtain an updated driver before installing the new device. However, you can certainly visit the manufacturer's website to see if an updated driver is available that adds features or fixes issues with the version you have. We recommend installing the device with the driver you have, and then checking later for an updated driver as needed.

Using Hot-Pluggable Devices

Many modern hardware devices are *hot-pluggable*, which means you just connect them to your computer and start using them. There's no need to shut down the computer before connecting the device. Nor is there any need to go through a formal installation process after you connect the device. However, you should always read the instructions that came with a device before you connect it for the first time because sometimes you need to install some software before you connect the device. When that's the case, as mentioned earlier, the software is usually on a CD that comes with the device.

TIP

Because Windows 8 includes a large library of device drivers, you can just connect a device and begin using it without going through the process of installing a device driver yourself. For example, you can connect a USB flash drive or one of many USB external hard drives and begin using them right away. Because most digital cameras look and act to Windows 8 as flash drives, you can do the same with cameras.

Hot-pluggable devices generally connect to the computer through USB, IEEE 1392 (aka FireWire), or PC Card (different versions called PCMCIA, Cardbus, and ExpressCard). The latter two types of connections are not as popular now as they were three to five years ago. USB has become the predominant hot-pluggable connection on most desktop computers, laptops, and some tablets.

We look at those in the sections that follow.

Connecting USB devices

Universal Serial Bus (USB) is the most common type of hot-pluggable device. USB is used by flash drives, smart phones, digital cameras, some types of microphones and headphones, external disk drives, and many other types of devices. Like most technologies, USB has evolved over the years, and three versions of USB are currently on the market.

The main differences among USB standard versions have to do with speed. USB 1.0 and 1.1 have two speeds: Low Speed (1.5 Mbps) used by mice and keyboards, and Full Speed (12 Mbps), more often used by digital cameras and disk drives. USB 2.0 added a third, High Speed, data rate, which can transfer data at the much faster rate of 480 Mbps.

USB 2.0 is downwardly compatible with USB 1.1 and 1.0, which means that you can use a USB 2.0 device in a computer with USB 1.*x* ports. However, the device will transfer at the 12 Mbps speed rather than the 480 Mbps speed available only in USB 2.0. So you don't really need to know exactly which type of USB your computer has. If you plug a USB 2.0 device into a USB 1.0 or 1.1 port, Windows displays a message telling you that you'd get better performance from a USB 2.0 port. The device will still work; it will just be a lot slower than if you'd plugged it into a USB 2.0 port.

Released in 2008, USB 3.0 is the latest specification for USB. It has a speed that is ten times faster than USB 2.0, with a transfer speed of 5 Gbit/s (625 MB per second). USB 3.0 is backward compatible with USB 2.0.

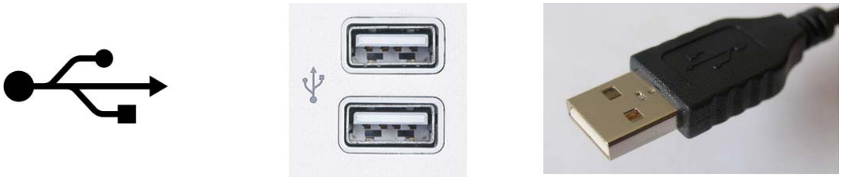
TIP

If you want to learn more about a technology mentioned in this chapter, such as USB, IEEE 1394, IDE, SATA, or whatever, browse to `www.wikipedia.org` or `www.webopedia.com` and search for the abbreviation of interest.

There are three different USB plug shapes: Type A, Type B, and Mini-USB or On-the-Go (OTG). The computer has female Type A ports, into which you plug the male Type A plug on the cable. The device might have Type A, B, or a mini-port. Figure 44.1 shows the symbol for USB and the general shape of USB ports on the computer. An example of the Type A plug is on the far right of that figure. USB plugs are all keyed so that they fit only one way. Try pushing the plug gently into the port, and if it won't fit, flip the plug over and try again.

FIGURE 44.1

USB symbol, ports, and plug types



Connecting a USB device should be easy, provided you've done any preliminary installations required by your specific device. The steps are as follows:

1. If the device has an on/off switch, turn it off.
2. Connect the device to the computer using the appropriate USB cable.
3. If the device has an on/off switch, turn it on.

The very first time you connect a device, you might get some feedback on the screen indicating that Windows is loading drivers for the device. That message is followed by one indicating that the device is ready for use.

In many cases, you get a Windows 8 message instructing you to tap it to see options after you've connected a device. After you tap (or click) that message, a list appears that with options that so you can choose what you want to do with the device. In the case of a hard drive, that would most likely be the Open Folder To View Files option, unless you were using that hard drive to store one specific type of file.

What's "Speed Up My System" and ReadyBoost?

Some USB devices can be used to speed up your system with ReadyBoost. When you plug a flash drive into a USB port, AutoPlay options might include an option to speed up your system using ReadyBoost, which is a Windows 8 feature designed to speed up some operations by using flash memory as intermediary storage between the processor and the hard drive. It works only with USB devices that actually can play that role. Flash memory has fast random I/O capabilities, and therefore isn't supported by all USB devices. See Chapter 47 for more information on ReadyBoost.

Connecting IEEE 1394 devices

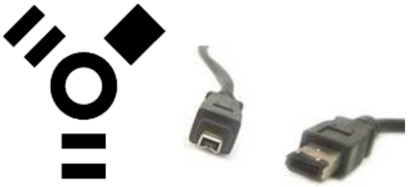
IEEE 1394 (often called 1394 for short) is a high-speed (800 Mbps) standard typically used to connect digital video cameras and high-speed disk drives to computers. The symbol and plug shape for an IEEE 1394 port are shown in Figure 44.2. IEEE 1394 also goes by the names FireWire and iLink.

TIP

1394a supports speeds up to 400 Mbps, and 1394b supports speeds up to 800 Mbps.

FIGURE 44.2

FireWire symbol and plug shape



Connecting a 1394 device is much the same as connecting a USB device:

1. Leave the computer running, and turn the device off (if it has an on/off switch).
2. Connect one end of the 1394 cable to the computer and the other end to the device.
3. Turn on the device and wait.

As always, what happens next depends on the device.

PC cards

PC Cards, Cardbus, and ExpressCard cards were once commonly used on laptop computers. It's almost impossible to find newer laptops with PC card capabilities, because of the availability and pervasiveness of USB devices. However, you may still have a computer that includes a PC card slot and those devices can still operate with Windows 8. You may need to hunt around for a device driver that supports Windows 8 (or even Windows Vista or Windows 7) for that device to work.

A PC card device is usually a little larger and thicker than a credit card. Figure 44.3 shows an example of a PC ExpressCard wireless network adapter.

FIGURE 44.3

PC card

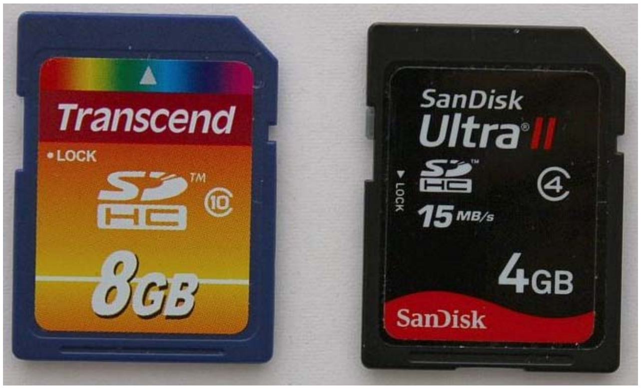
Connecting a PC Card to a notebook computer is simple. Just slide the card into the slot, right side up, and push until it's firmly seated. As with USB and FireWire devices, you should get some feedback on the screen indicating when the device is connected and ready for use. How you use the device depends on the type of device you inserted.

Using memory cards

Memory cards are hot-pluggable storage devices. Figure 44.4 shows examples of some memory cards. Most memory cards are used in digital cameras, tablet computers, and jump drives. You just connect the camera or jump drive to a USB port to access the content on the memory card. However, if your computer has slots for memory cards, you can also insert the card directly into the appropriate slot.

FIGURE 44.4

Examples of memory cards



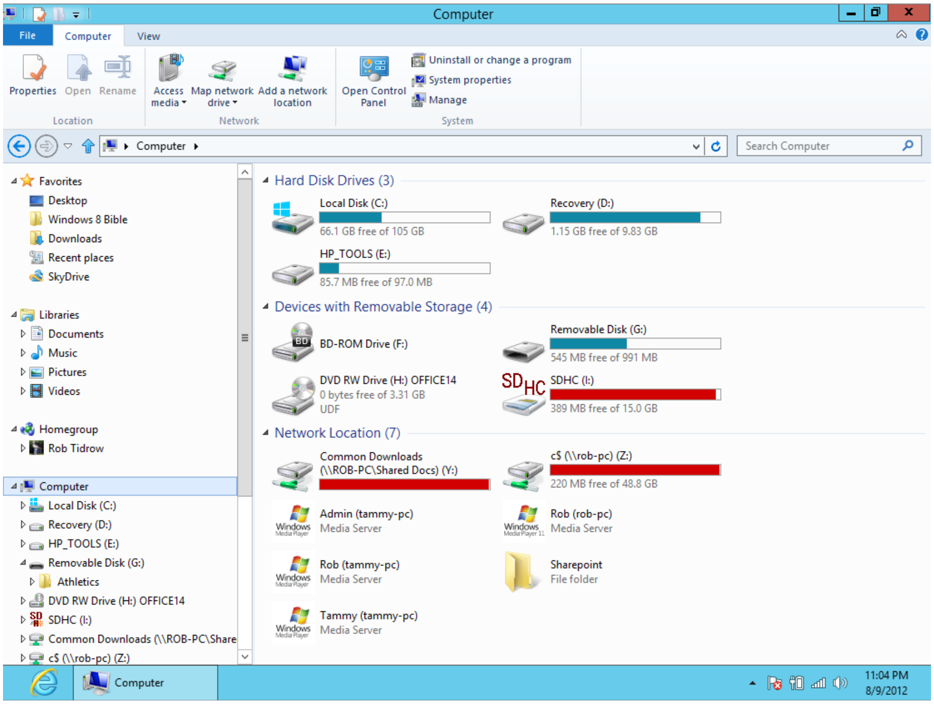
After you insert a memory card into a slot, you should get some feedback on the screen indicating that the card is ready for use. That may be in the form of the Windows 8 auto play dialog box, or an Explorer window may open to show you the contents of the card. Either way, the card will be treated as a USB mass storage device, as discussed next.

Memory cards and USB mass storage

Memory cards and USB devices that store data act like disk drives when you connect them to a computer. As such, each will have an icon in your Computer folder when it's connected. Figure 44.5 shows an example where we have connected a flash drive (drive G:), a DVD drive (drive H:), and a memory card (drive I:) through USB ports.

FIGURE 44.5

External devices in Computer folder


Computer
File
Computer
View
Properties
Open
Rename
Location
Access media
Map network drive
Add a network location
Network
Open Control Panel
Uninstall or change a program
System properties
Manage
System
Computer
Search Computer
Favorites
Desktop
Windows 8 Bible
Downloads
Recent places
SkyDrive
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Removable Disk (G:)
Athletics
DVD RW Drive (H:) OFFICE14
SDHC (I:)
Common Downloads (\\ROB-PC\Share
c$ (\\rob-pc) (Z:)
Hard Disk Drives (3)
Local Disk (C:)
66.1 GB free of 105 GB
Recovery (D:)
1.15 GB free of 9.83 GB
HP_TOOLS (E:)
85.7 MB free of 97.0 MB
Devices with Removable Storage (4)
BD-ROM Drive (F:)
Removable Disk (G:)
545 MB free of 991 MB
DVD RW Drive (H:) OFFICE14
0 bytes free of 3.31 GB
UDF
SDHC (I:)
389 MB free of 15.0 GB
Network Location (7)
Common Downloads (\\ROB-PC\Shared Docs) (Y:)
c$ (\\rob-pc) (Z:)
220 MB free of 48.8 GB
Admin (tammy-pc)
Media Server
Rob (rob-pc)
Media Server
Rob (tammy-pc)
Media Server
Sharepoint
File folder
Tammy (tammy-pc)
Media Server
Computer
11:04 PM
8/9/2012

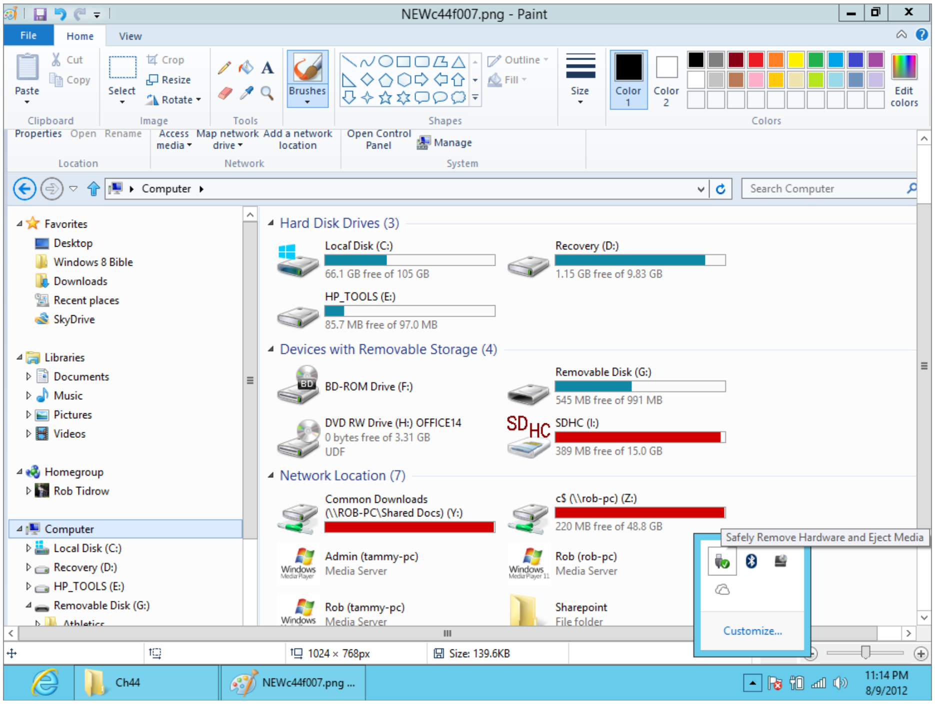
Using such a device is no different from using any other disk drive. To see the contents of the device, open its icon. Use the standard techniques to navigate through folders, to delete files and folders, and to move and copy files and folders. See Chapters 27 and 28 for the necessary buzzwords and basic skills.

Disconnecting hot-pluggable devices

Before you disconnect a hot-pluggable device from a computer, you might want to make sure it's not in the middle of a file transfer or holding a file that you have open in some program. To do that, look in the Notification area and see if there's one that looks like the one shown in Figure 44.6. (That icon shows only when you have a storage device attached.) Note that the icon displays a tooltip called Safely Remove Hardware And Eject Media.

FIGURE 44.6

Safely Remove Hardware And Eject Media icon


NEWc44f007.png - Paint
File
Home
View
Paste
Cut
Copy
Clipboard
Select
Crop
Resize
Rotate
Image
Tools
Brushes
Outline
Fill
Shapes
Size
Color 1
Color 2
Colors
Edit colors
Properties
Open
Rename
Location
Access media
Map network drive
Add a network location
Network
Open Control Panel
Manage
System
Computer
Search Computer
Favorites
Desktop
Windows 8 Bible
Downloads
Recent places
SkyDrive
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Removable Disk (G:)
Athletics
Hard Disk Drives (3)
Local Disk (C:)
66.1 GB free of 105 GB
Recovery (D:)
1.15 GB free of 9.83 GB
HP_TOOLS (E:)
85.7 MB free of 97.0 MB
Devices with Removable Storage (4)
BD-ROM Drive (F:)
Removable Disk (G:)
545 MB free of 991 MB
DVD RW Drive (H:) OFFICE14
0 bytes free of 3.31 GB
UDF
SDHC (I:)
389 MB free of 15.0 GB
Network Location (7)
Common Downloads (\\ROB-PC\Shared Docs) (Y:)
c$ (\\rob-pc) (Z:)
220 MB free of 48.8 GB
Admin (tammy-pc)
Media Server
Rob (rob-pc)
Media Server
Rob (tammy-pc)
Media Server
Sharepoint
File folder
Safely Remove Hardware and Eject Media
Customize...
1024 × 768px
Size: 139.6KB
Ch44
NEWc44f007.png ...
11:14 PM
8/9/2012

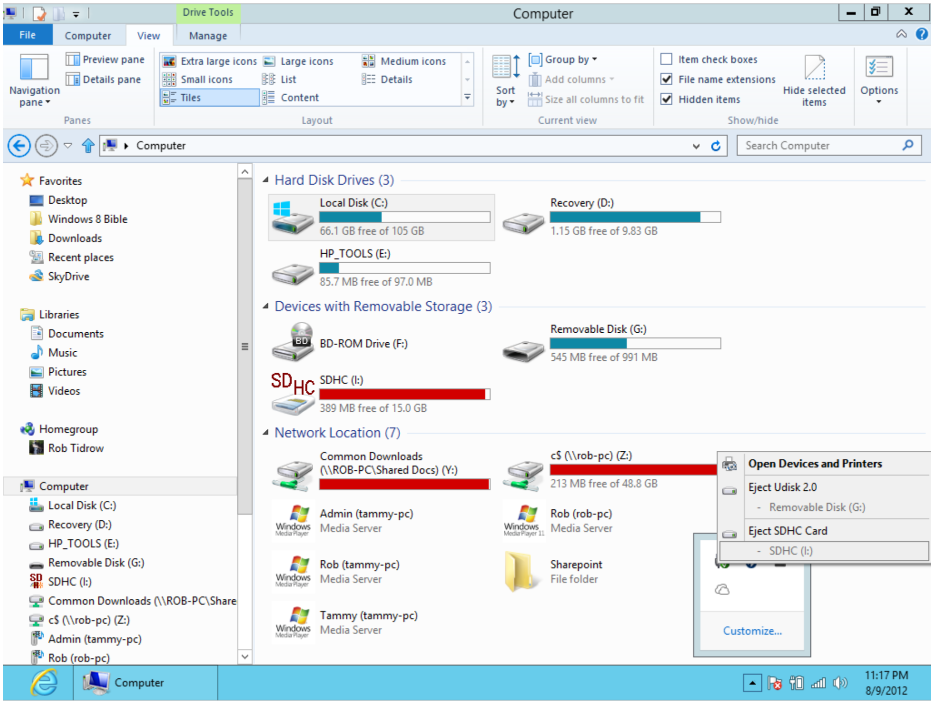
To safely remove a device, click the Safely Remove Hardware And Eject Media icon. The menu shown in Figure 44.7 opens, listing each connected mass storage device. Click the action you want to take from the menu.

TIP

If it’s difficult to reach around to the back of the computer to connect a USB or FireWire device, just leave that end of the cable plugged into the computer. Disconnect the cable from the device, and leave that end of the cable within easy reach for future connections. Or get an external USB or FireWire hub, connect the hub to the back of the computer by its cable, and leave the hub on your desk within easy reach.

FIGURE 44.7

Safely Remove Hardware menu


Drive Tools
Computer
File
Computer
View
Manage
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Tiles
Content
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Item check boxes
File name extensions
Hidden items
Hide selected items
Options
Show/hide
Search Computer
Favorites
Desktop
Windows 8 Bible
Downloads
Recent places
SkyDrive
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Removable Disk (G:)
SDHC (I:)
Common Downloads (\\ROB-PC\Share
c$ (\\rob-pc) (Z:)
Admin (tammy-pc)
Rob (rob-pc)
Hard Disk Drives (3)
Local Disk (C:)
66.1 GB free of 105 GB
Recovery (D:)
1.15 GB free of 9.83 GB
HP_TOOLS (E:)
85.7 MB free of 97.0 MB
Devices with Removable Storage (3)
BD-ROM Drive (F:)
Removable Disk (G:)
545 MB free of 991 MB
SDHC (I:)
389 MB free of 15.0 GB
Network Location (7)
Common Downloads (\\ROB-PC\Shared Docs) (Y:)
c$ (\\rob-pc) (Z:)
213 MB free of 48.8 GB
Admin (tammy-pc) Media Server
Rob (rob-pc) Media Server
Rob (tammy-pc) Media Server
Sharepoint File folder
Tammy (tammy-pc) Media Server
Open Devices and Printers
Eject Udisk 2.0
- Removable Disk (G:)
Eject SDHC Card
- SDHC (I:)
Customize...
Computer
11:17 PM
8/9/2012

Simply click the Eject command for the drive you want to disconnect. The media will not physically eject from the computer, but Windows closes it and displays a message that the device can safely be disconnected from the computer. You can then safely remove it from the computer.

Not all devices are hot-pluggable. Some require a more elaborate connection and installation procedures. Those kinds of devices are discussed in the next section.

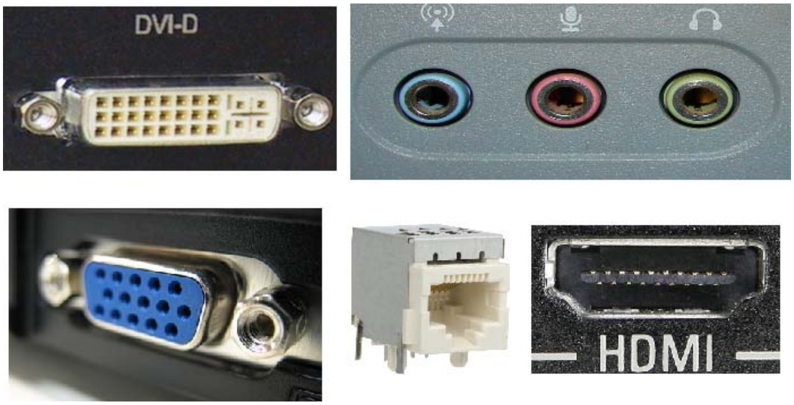
Not-So-Hot-Pluggable Devices

Hardware devices that aren't hot-pluggable require a bit more effort than hot-pluggable devices. Most require that you turn off the computer, connect the device, turn the device on, and then turn the computer back on. You might also need to install some software to get the device to work. It all depends on the device you're connecting. As always, you have to read the instructions that came with the device for specifics. We can only provide general guidelines and examples here that give you an idea of what to expect.

Most computers have the ports pointed out in Figure 44.8. Your computer may have more or fewer such ports, and your ports probably won't be arranged exactly like that. On a notebook computer, some of the ports are likely be on the side of the computer, perhaps hidden under a sliding or hinged door. But the basic shape of each port will be as shown in the figure.

FIGURE 44.8

Ports on the back of a computer

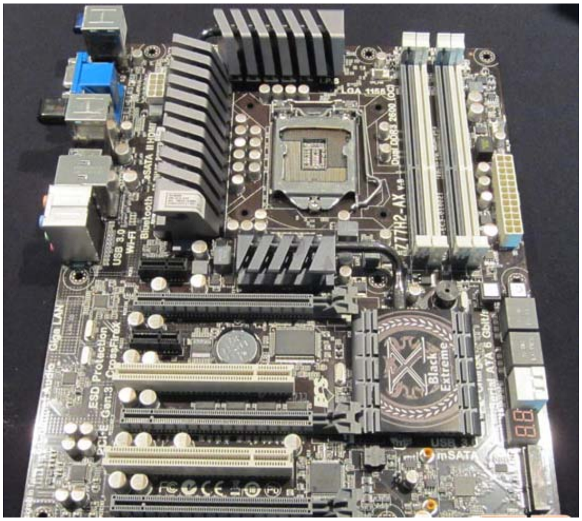


You can install some devices inside the computer case. These connect to sockets inside the computer case on the *motherboard* (also called the *mainboard*). The motherboard is a circuit board that provides the wiring between all the hardware devices that make up the system, including the CPU, memory (RAM), internal disk drives, and everything else. The sockets that accept these devices are called *expansion slots*, and the devices that go in them are typically called *adapter cards*.

Figure 44.9 provides a general idea of what different types of internal slots and ports look like.

FIGURE 44.9

Slots on a computer motherboard

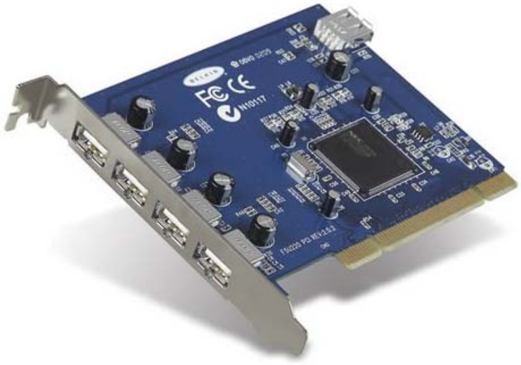

Z77H2-AX
Black Extreme
mSATA
ESD Protection
Giga LAN

Installing expansion cards

Many internal hardware devices are PCI Cards, which slide into a PCI slot. The slots are positioned so that one end of the card lines up perfectly with the back of the computer, exposing one or more external connectors. Figure 44.10 shows a general example of what such a card looks like.

FIGURE 44.10

A sample expansion card



Many motherboards may have PCI Express (PCIe) and PCI Express 16. These provide faster communication between the motherboard, which in turn allows for more powerful expansion cards. The PCI Express 16 slot is ideal for high-powered graphics cards designed to work with advanced graphics and large High Definition TV screens. The AGP (Accelerated Graphics Port) port is designed specifically for a graphics card.

Before you buy an expansion card, you need to know what slots are available on your motherboard. Before you install a card, you need to read the instructions that came with the card. There is no one-rule-fits-all fact that applies to all of the thousands of hardware devices you can add to a PC. You should install the device exactly as instructed in the instructions provided by the manufacturer of the device. Winging it is likely to lead to many hours of hair-pulling frustration. It's also very important that you turn off the computer before opening the case to install a card. Remove the power cord, too. Ideally, you should wear an antistatic wrist strap so that you don't generate any static electricity that could damage any of the components in the computer, potentially rendering it unusable and voiding your warranty.

TIP

You can buy an antistatic wrist strap at computer hardware stores, including online stores such as TigerDirect (`www.tigerdirect.com`), CDW (`www.cdw.com`), and Cyberguys (`www.cyberguys.com`).

Many AGP and PCIe 16 slots have a locking mechanism to hold the card steady in the slot. You have to make sure that it's in the unlocked position before you try to insert the card into the slot. When installing the card, push firmly on the card to make sure you really get it in there. Don't force it and break it, but push it in well enough to ensure that it's firmly and evenly seated within its slot. If the slot has a locking mechanism, push it into the locked position. Put the case cover back together again, plug in the power cord, and then turn on the PC.

CAUTION

When removing a card that has a locking device, don't forget to slide it into the unlocked position. Trying to force the card out of the locked slot would likely cause a lot of damage!

If the device is plug-and-play (as many modern devices are), the rest should be easy. The computer should boot up normally, but you won't necessarily get to the desktop right away. Instead, Windows should detect the new device and go through an installation procedure to get the device working. You'll get some feedback on the screen as that's happening in the form of Notification area messages. When the notification messages stop and the desktop looks normal, the device should be ready to use.

Installing more memory (RAM)

Installing more RAM isn't exactly like installing other devices because you're not likely to get any feedback at all on the Windows desktop when you're done. RAM is such an integral part of the computer that it doesn't really get "installed." The processor just detects it as soon as you turn on the power. One of the few places you'd even see that you have more RAM is on the System screen of the Control Panel applets.

The key consideration to adding more RAM is finding the right type of memory. You need to match the type and speed of your existing RAM chip, and you need an available DIMM slot on the motherboard. Also, every motherboard has a limit as to the maximum speed and type of memory it can handle. When you build a PC, you know exactly what's involved. But when you buy a prebuilt PC, it's not always easy to find out what you need to know.

Upgrading the CPU

Every motherboard has a certain maximum CPU speed it can handle. You won't know what that is unless you can get the specs on your exact motherboard. Rather than try to upgrade just the CPU, you'd probably be better off upgrading the motherboard, CPU, and RAM while you're at it. That way you can speed up everything but still use your existing hard drive, DVD drive, mouse, keyboard, monitor, and everything else. Or, for a little extra, you can probably purchase a new PC almost as inexpensively as upgrading your old one.

A barebones kit might be the best way to go. With a barebones kit you can get a motherboard, CPU, RAM, and power supply already assembled in a new case. You then transfer your existing hard drive, CD drive, mouse, keyboard, monitor, and everything else to that new case. You get the benefits of a newer, faster computer without the expense of buying an entirely new PC.

Your best bet is to go to the computer manufacturer's website and find the main web page for your exact model of computer. You can often find out exactly what type and speed of RAM chip is currently installed using that method. PNY (a company that sells RAM chips) has memory information on its website (`www.pny.com`) to help you understand terms and product offerings.

TIP

The PNY site also has installation guides, which might help you get a feel for what you'll be doing when you purchase more RAM. Remember that you have to look inside the computer and see if you even have an available slot for adding more RAM first.

Even so, installing more RAM isn't really something for the technologically timid to undertake. Even the slightest mistake could prevent the computer from starting at all. If the speed of the new chip doesn't exactly match the speed of the existing chip, the computer will start but you're likely to end up with endless error messages when you try to do just about anything.

Installing a second hard drive

If you need more hard disk space, installing a second hard drive is a good option. Hard disk space is cheap, and it's a lot easier to just add another drive than it is to try to pinch a few more megabytes out of a single drive by compressing files and moving things out to removable disks.

Most internal drives are relatively easy to install. What's more, with today's computers, the computer will automatically detect the drive type on boot. If you don't feel up to the task of installing a new internal drive, however, consider an external drive.

TIP

If the computer doesn't recognize the new disk, enter the computer's BIOS Setup program and make sure the BIOS is configured to auto-detect drives on the new drive's interface.

External hard drives are relatively simple to install. Basically you just connect the drive to a USB or FireWire port. If you already bought an internal hard drive but haven't connected it yet, you can convert it to an external drive just by putting it in an external drive enclosure. Just make sure you get an enclosure that has the right internal connectors (IDE or SATA) for your drive.

TIP

To see examples of hard drive enclosures, search an online retailer such as `www.newegg.com`, `www.tigerdirect.com`, or even `http://froogle.google.com` for `external drive enclosure`. Drives that connect via USB 2.0 can move data at 480 Mbps, which is plenty fast for a hard drive and won't be a performance bottleneck. USB 3.0–compatible drives can move data at 5 Gbps, but many standard desktop and laptops do not yet support USB 3.0.

Hard drives for most non-server PCs fall into two main categories, Serial ATA (SATA) and Parallel ATA (PATA), more commonly referred to as Integrated Drive Electronics (IDE) drives. (The ATA stands for Advanced Technology Attachment.) SATA III is the newer, faster, and easier technology.

NOTE

Servers and some workstations use Small Computer System Interface (SCSI) drives. However, SATA drives provide faster data rates than SCSI drives.

The original SATA drives moved data at a good 150 Mbps (150 million bits per second). The newer SATA II drives move data at 300 Mbps, and third-generation SATA drives support 600 Mbps. Before adding a second SATA drive, you need to make sure your motherboard has SATA connectors, and whether they are the appropriate connectors for the type of SATA device you want to install.

IDE drives come in multiple speeds, too, ranging from 33 Mbps to 133 Mbps. The maximum speed your PC can use depends on the speed of the IDE connectors on the motherboard.

IDE drives have an unusual configuration where you can connect two drives to a single IDE port. One drive is called the *master drive*, the other the *slave drive*. You have to physically set a jumper on the drive to make the drive either master or slave. Then you have to connect the drive to the right place on the cable. The master goes at the end of the cable. The slave goes on the plug in the center of the cable.

Again, your best bet before installing any hardware device is to follow the instructions that came with the device — to the letter — before you even turn the computer back on and use Windows to configure the device. If in doubt, have a pro install the hardware for you. But, assuming you've installed the drive, either internally or externally, you can then use Windows 8 to partition and format the drive.

Primary and extended partitions

You can divide a basic disk into multiple *partitions*. Each partition looks like a separate item in your Computer folder. The drive can be divided into a maximum of four *primary* partitions, or three primary partitions and one *extended* partition. The difference is that a primary partition can be used as a *system partition*, meaning you can install an operating system on it and boot the computer from it.

An extended partition can't be a boot disk and can't contain an operating system. However, you can divide an extended partition into multiple logical drives, where each logical drive has its own drive letter and icon in the Computer folder, and looks like a separate drive.

In Windows XP and previous versions of Windows, you could explicitly create extended partitions using the Disk Management console. Microsoft changed that in Windows Vista, and that change carries over to Windows 8. Now, rather than the option to create either a primary or extended partition, Disk Management gives you the option of creating a new simple volume. The type of volume created when you use this command depends on the number of partitions already on the disk. The first three partitions you create are created as primary partitions. The fourth is created as an extended partition.

TIP

If you do need an extended partition, you can use the DiskPart command in a command console to create it. To learn more about DiskPart, open a command console and enter **diskpart**. At the DiskPart command prompt, enter **Help** to see a listing of commands.

You can use three types of disks in Windows 8:

- **Basic:** This is the type of disk supported by DOS and all previous versions of Windows.
- **Dynamic:** This type of disk was introduced in Windows 2000. Dynamic disks support the following types of volumes:
  - **Simple:** These volumes make up space for a single dynamic disk and can use a single region on the disk or multiple regions on the disk.
  - **Spanned:** These volumes make up space on more than one physical disk (they span multiple physical drives, hence the name).
  - **Striped:** These volumes stripe the data for a single logical volume across multiple physical disks, providing improved performance by distributing the read/write load across multiple disks.
- **GPT:** This stands for Globally Unique Identifier Partition Table. GPT supports theoretical volume sizes up to 18 EB. The primary advantages to using GPT are the very large volume size and the large number of partitions you can create on a GPT disk. Disk structure is also optimized for performance and reliability.

TIP

EB stands for exabyte, which is equal to about a million terabytes.

Which disk type you choose really depends on the type of disk and your needs. If you are installing a very high-capacity disk in a Windows 8 computer, we recommend using GPT. If you need to create a spanned or striped volume, use a dynamic disk. For general-purpose disks, a basic disk is fine.

Partitioning and formatting the disk

After you have a new hard drive installed, you can start Windows 8 and use the Disk Management tool to partition and format the drive. Log in to an account with administrative privileges for this task. If the Computer Management tool doesn't start automatically after you've logged in, you can get to it by following these steps:

1. On the desktop, press Windows+X.
2. Click Disk Management from the power menu.

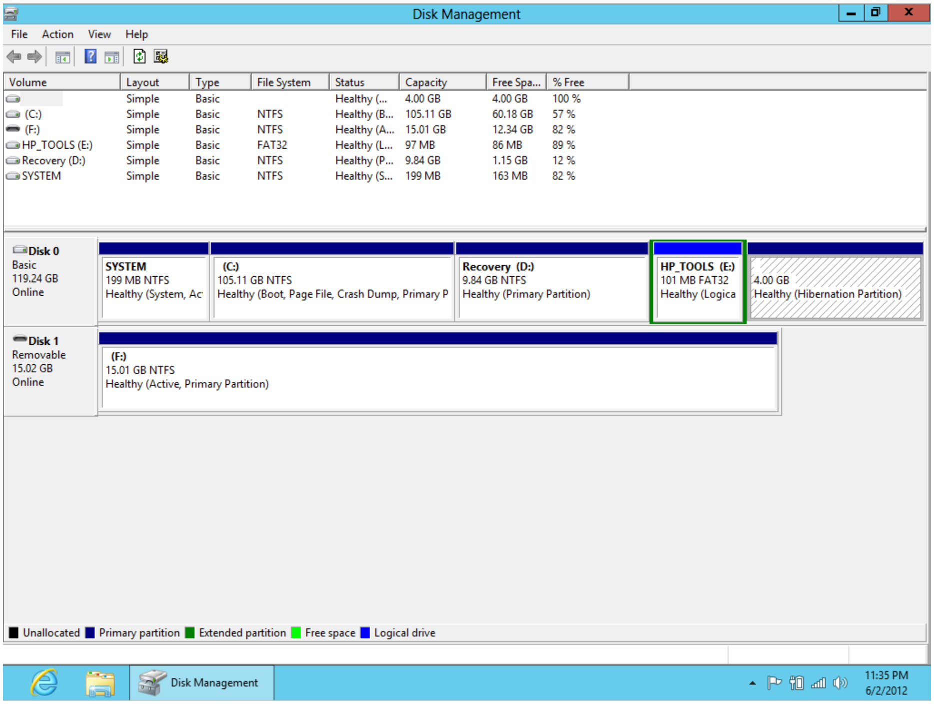
Caution

Repartitioning and/or reformatting a disk that already contains files will result in the *permanent* loss of all files on that disk. You should not attempt to repartition or reformat an existing disk unless you fully understand the consequences, and are fully prepared to recover any lost files. Again, if you don't have any formal training and experience in technical matters, it's best to leave this sort of thing to the pros. An in-depth treatment of these more technical hardware matters is beyond the scope of this book.

The new drive appears at the bottom of the display, most likely as Disk 1 (assuming the system has one other disk drive, which will show as Disk 0), as the example shown in Figure 44.11. The drive's space is indicated by a dark bar showing Unallocated in the lower-left corner.

FIGURE 44.11

The Disk Management tool



Volume	Layout	Type	File System	Status	Capacity	Free Spa...	% Free
	Simple	Basic		Healthy (...	4.00 GB	4.00 GB	100 %
(C:)	Simple	Basic	NTFS	Healthy (B...	105.11 GB	60.18 GB	57 %
(F:)	Simple	Basic	NTFS	Healthy (A...	15.01 GB	12.34 GB	82 %
HP_TOOLS (E:)	Simple	Basic	FAT32	Healthy (L...	97 MB	86 MB	89 %
Recovery (D:)	Simple	Basic	NTFS	Healthy (P...	9.84 GB	1.15 GB	12 %
SYSTEM	Simple	Basic	NTFS	Healthy (S...	199 MB	163 MB	82 %

Disk 0
Basic
119.24 GB
Online

SYSTEM
199 MB NTFS
Healthy (System, Ac

(C:)
105.11 GB NTFS
Healthy (Boot, Page File, Crash Dump, Primary P

Recovery (D:)
9.84 GB NTFS
Healthy (Primary Partition)

HP_TOOLS (E:)
101 MB FAT32
Healthy (Logica

4.00 GB
Healthy (Hibernation Partition)

Disk 1
Removable
15.02 GB
Online

(F:)
15.01 GB NTFS
Healthy (Active, Primary Partition)

To partition the drive as a basic disk with a simple volume:

1. Right-click within the unallocated space of the new drive and choose New Simple Volume.
2. On the first page of the New Simple Volume Wizard that opens, click Next.
3. The next wizard page asks what size you want to make the partition and suggests the full capacity of the disk. You can choose a smaller size if you intend to divide the disk into multiple partitions. After you make your selection, click Next.
4. The next wizard page asks you to assign a drive letter to the drive. It suggests the next available drive letter, which is a good choice. Click Next.
5. The next wizard page asks how you want to format and label the disk. Your options are as follows:
   - **Do Not Format This Volume:** If you choose this option, you'll have to format the partition later. We do not suggest choosing this option.
   - **File System:** Your choices here depend on the disk type. For volumes on basic and dynamic disks, you can choose between exFAT and NTFS. On a GPT disk, you can choose only NTFS.
   - **Allocation Unit Size:** This defines the cluster size. The Default option automatically chooses the best allocation unit size given the type and capacity of the disk, so that would be your best choice.
   - **Volume Label:** This is the name that appears with the drive's icon in My Computer. You can also change that name at any time in the future.
   - **Perform A Quick Format:** If you choose this option, formatting will go quickly, but the drive won't be checked for errors. Better to leave this option unselected.
   - **Enable File And Folder Compression:** Only available if you chose NTFS as the file system, this option automatically compresses all files and folders on the drive. This conserves disk space, but there is a minimal performance overhead for the compression/decompression as the drive is used. You can still compress individual files and folders if you leave this option unselected.
6. Click Next after making your selections.
7. The last wizard page summarizes your selections. Click Finish.

Now you get to wait for the disk to be formatted. This could take some time, depending on the size of the volume and if you chose the quick format option. You can continue to use your computer while the drive is being formatted or you can wait until it finishes.

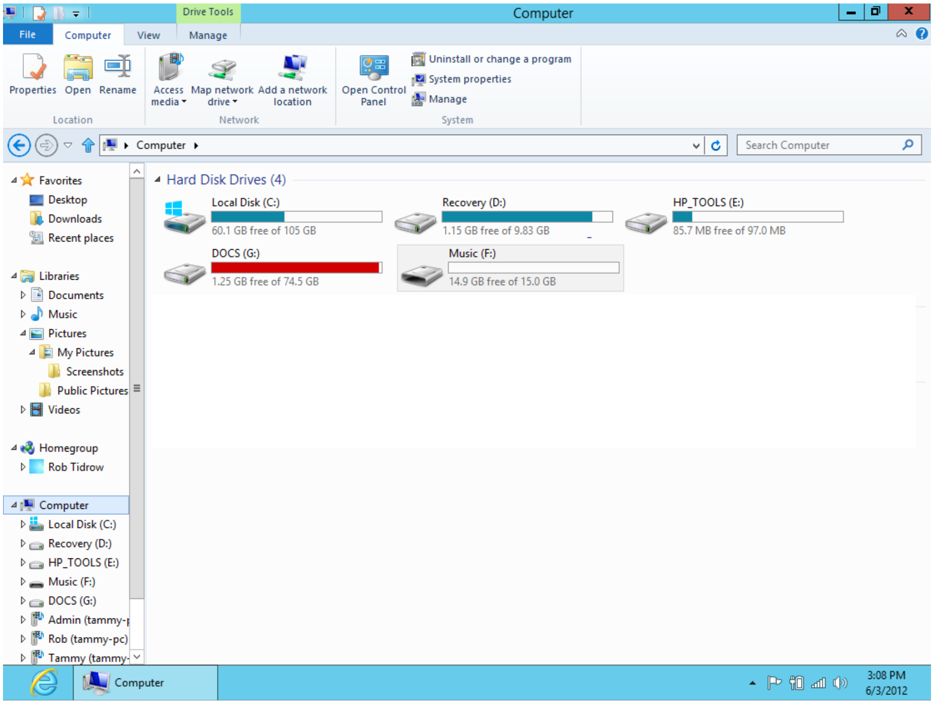
If you set up the drive as one large partition, you're done when the Formatting indicator reaches 100%. You can close the Disk Management tool.

If you are partitioning the disk into smaller units, you can repeat the steps outlined previously for each partition. Just make sure that you right-click an unpartitioned portion of the disk in Step 1. If you create an extended partition with the DiskPart command, you need to add one or more physical volumes to the disk through the Disk Management console. Just right-click the extended partition and choose New Simple Volume, and then follow the steps described previously to create the new volume. Repeat the process for any other volumes you want to create in the extended partition.

Figure 44.12 shows an example with a secondary drive (Disk 1) containing two partitions, drives G: and F:. Their volumes' labels are Docs and Music, respectively.

FIGURE 44.12

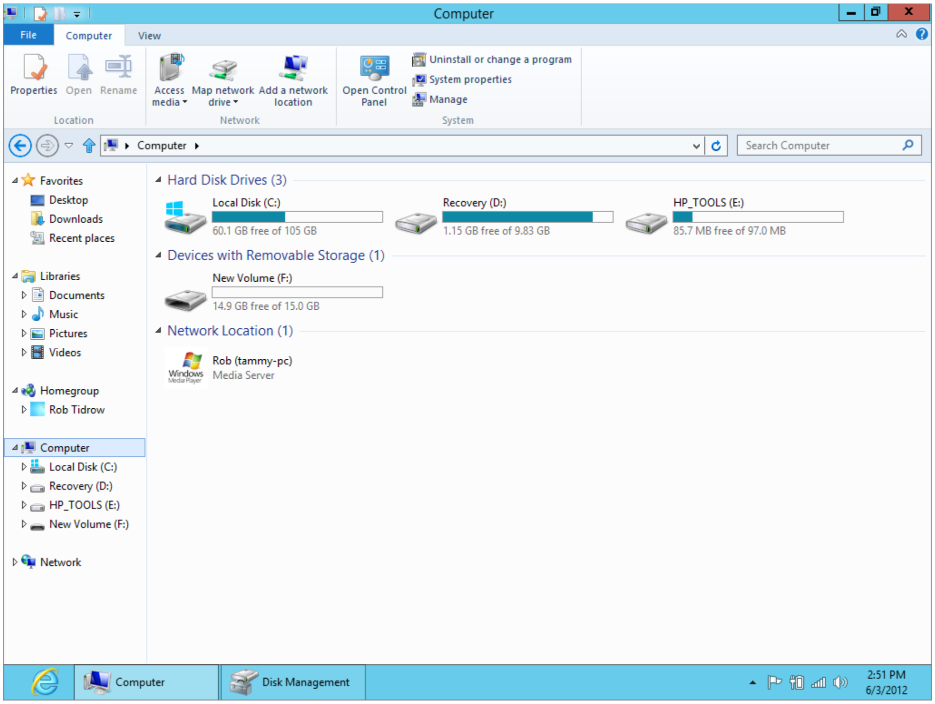
Two physical hard drives in the Disk Management tool


Drive Tools
Computer
File
Computer
View
Manage
Properties
Open
Rename
Location
Access media
Map network drive
Add a network location
Network
Open Control Panel
Uninstall or change a program
System properties
Manage
System
Computer
Search Computer
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
My Pictures
Screenshots
Public Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Music (F:)
DOCS (G:)
Admin (tammy-
Rob (tammy-pc)
Tammy (tammy-
Hard Disk Drives (4)
Local Disk (C:)
60.1 GB free of 105 GB
Recovery (D:)
1.15 GB free of 9.83 GB
HP_TOOLS (E:)
85.7 MB free of 97.0 MB
DOCS (G:)
1.25 GB free of 74.5 GB
Music (F:)
14.9 GB free of 15.0 GB
Computer
3:08 PM
6/3/2012

When all the partitioning and formatting is complete, exit the Disk Management tool. Access the drive as you would any other — through the Computer folder. Figure 44.13 shows an example. Notice how each Hard Disk Drive icon represents a drive (or partition) defined in the Disk Management tool.

FIGURE 44.13

Drives and partitions as viewed through the Computer folder


Computer
File
Computer
View
Properties
Open
Rename
Access media
Map network drive
Add a network location
Open Control Panel
Uninstall or change a program
System properties
Manage
Location
Network
System
Computer
Search Computer
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
New Volume (F:)
Network
Hard Disk Drives (3)
Local Disk (C:)
60.1 GB free of 105 GB
Recovery (D:)
1.15 GB free of 9.83 GB
HP_TOOLS (E:)
85.7 MB free of 97.0 MB
Devices with Removable Storage (1)
New Volume (F:)
14.9 GB free of 15.0 GB
Network Location (1)
Rob (tammy-pc)
Media Server
Computer
Disk Management
2:51 PM
6/3/2012

Other hard drive operations

This section covers some general issues concerning hard disks. All of these operations pose some risk of data loss and should be attempted only by people who understand the risks and are confident they have backups of all important data.

Converting a disk to NTFS

Windows 8 offers three different file systems for formatting a hard drive. FAT32 was introduced with Windows 95. New Technology File System (NTFS) was introduced in Windows NT 4.0, largely to support user access control required in domain networking. Extended FAT (exFAT) is a new file system that removes several limitations of the older FAT file systems while providing compatibility with other operating systems and devices.

When you divide a hard drive into multiple volumes, you can format each independently of the other. (A volume is any partition or logical drive that has its own drive letter and icon in File Explorer's Computer view.) NTFS is the preferred file system for Windows 8 because of its better performance and stronger security. There's no reason to use FAT32 or exFAT file systems unless you have multiple operating systems installed and can choose one or the other at startup. For example, if you can boot to Windows 8 and Linux, the Linux operating system will not be able to access files on a local NTFS volume (without adding third-party Linux tools).

Each file system imposes minimum and maximum volume sizes, and a maximum file size. Keep in mind that these file systems apply only to the hard drives, not to media such as USB flash drives, CDs, or DVDs. Table 44.1 summarizes the differences among the file systems.

TIP

See the section, "The exFAT file system," later in this chapter to learn more about the exFAT file system.

TABLE 44.1 Differences Among NTFS, exFAT, and FAT32 File Systems for Hard Drives

Description	NTFS	exFAT	FAT32
Locally accessible to	Windows 8, Windows 7, 2008 Server, Windows Vista, 2003, XP, and 2000	Windows XP, Vista, and 7; Linux	Windows 95 and later
Minimum volume size	10MB		512MB
Maximum volume size	> 2TB*	64ZB**	32GB
Maximum file size	Entire volume	64ZB	4GB
Access Control Lists (ACLs)	Yes	No	No

* Terabyte, a trillion bytes or 1,024GB.
** Zettabyte, a sextillion bytes or 1 billion terabytes

CAUTION

Changing the file system on a drive poses some risk of data loss and should be attempted only by people who understand the risks and are prepared to recover from any loss of data.

You can convert a FAT32 file system to NTFS, but it's not possible to go in the other direction. That is, you can always upgrade to NTFS, but you cannot downgrade. Be sure to close all open documents and program windows prior to starting the conversion. To convert a FAT32 volume to NTFS, use the following syntax with the command console `convert` command:

```
convert volume: /fs:ntfs
```

where *volume* is the letter of the hard drive you want to convert. Advanced users can enter `convert /?` at the command prompt or search Windows Help And Support for more advanced options. To enter the command:

1. Close all open documents and program windows.
2. Press Windows+X and choose Command Prompt (Admin).
3. Type the command using the syntax shown. For example, to convert hard disk drive D: from FAT32 to NTFS, type **convert d: /fs:ntfs**.
4. Press Enter and follow the instructions on the screen.

If you're converting your system drive (C:), you'll need to restart the computer to start the conversion. Don't use the computer during the conversion process.

Shrinking and extending partitions

TIP

You can shrink and extend partitions without reformatting, either from the Disk Management tool or by using the `DISKPART` command.

You can shrink existing partitions to free up unallocated space. And if you have any unallocated space, you can extend existing partitions into that space. As always, there is some risk in doing this. Therefore, you should back up everything before even attempting to shrink or extend a partition.

CAUTION

The techniques described in this section will *not* increase the amount of hard disk space you have. The techniques described in this section are best left to professionals and highly knowledgeable computer users. The slightest error could cost you everything on your hard drive! Not recommended for casual computer users.

You can shrink a basic volume that's either raw (unformatted) or formatted with NTFS quite easily right in the Disk Management tool. You can shrink to the current used space size or to the first unmovable files (such as a paging file) on the volume. To shrink a volume, just right-click it at the bottom of the Disk Management screen and choose Shrink Volume. A dialog box opens to show how far you can shrink the selected volume. Just make your selection and click OK.

Likewise, if you have some unallocated space on the drive, you can extend an existing partition into that space. A wizard opens to take you step-by-step through the process.

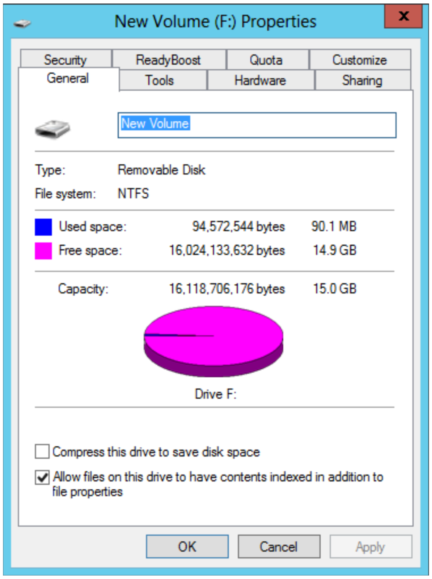
For more information on extending and shrinking volumes, including spanned volumes, search the Help in the Disk Management tool.

Changing a volume label

A *volume label* is the name of a volume as it appears in your Computer folder. By default, each volume is labeled Local Disk. To change a drive's volume label, right-click its icon in your Computer folder and choose Properties. On the General tab of the Properties sheet, type the new name into the first text box, where you see New Volume in Figure 44.14.

FIGURE 44.14

Changing a volume label



New Volume

Type: Removable Disk
File system: NTFS

🟦 Used space:	94,572,544 bytes	90.1 MB
🟪 Free space:	16,024,133,632 bytes	14.9 GB
Capacity:	16,118,706,176 bytes	15.0 GB

Drive F:

☐ Compress this drive to save disk space
☑ Allow files on this drive to have contents indexed in addition to file properties

Changing a drive letter

Drive letters A, B, and C are reserved for floppy disk drives and your hard drive, and cannot be changed. Beyond those first three letters, you can assign drive letters as you see fit. Just be aware that when you do, Windows will *not* update your settings and programs to reflect those changes. All settings you've made concerning locations of files in all programs will be invalid. Virtual folders and items in Media Player and Live Photo Gallery need to be updated to reflect the new drive locations. If you're not sure how to deal with these things, it is better not to change any drive letters.

CAUTION

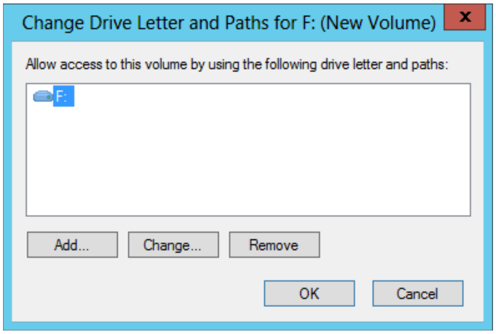
Changing drive letters is an operation that's best left to experienced users who understand the consequences and can solve, on their own, the problems that are likely to follow.

No two drives can have the same drive letter. If you need to swap two drive letters (for example, change drive E: to drive F: and change drive F: to drive E:), you'll need to temporarily leave one of the drives without a letter or assign it an unused drive letter. The Disk Management tool, which you need to make this change, will allow you to do that. Here's how it works:

1. Navigate to the Disk Management tool described at the start of this section.
2. Right-click the graphical representation of the drive whose letter you want to change. Or, to change a removable drive, right-click its drive letter as in Figure 44.15. Choose Change Drive Letter And Paths.
3. If the new letter to which you want to assign the drive is available, click Change, choose the new drive letter, and click OK. Otherwise, if you want to assign the current drive's letter to a different drive, click Remove and click Yes.
4. Repeat Steps 2 and 3 until all drives have the letters you want them to have. Then close the Disk Management tool.

FIGURE 44.15

Changing a drive letter



Change Drive Letter and Paths for F: (New Volume)

Allow access to this volume by using the following drive letter and paths:

F:

The new drive letters show up the next time you open your Computer folder.

The exFAT file system

Microsoft has developed a new file system called exFAT, for Extended FAT. exFAT is also sometimes referred to as FAT 64 (for 64-bit).

exFAT is not intended as a replacement for NTFS. Rather, exFAT is geared primarily toward mobile personal storage, as used in MP3 players and other mobile devices. exFAT offers several advantages:

- Theoretical volume size of 64ZB (recommended size 512TB)
- Theoretical maximum file size of 64ZB (recommended size 512TB)
- Supports more than 1,000 files per directory
- Provides cluster bitmap for fast storage allocation
- Better contiguous on-disk layout, useful for recording movies
- Is extensible

exFAT is supported natively by Windows 8, Windows 7, and Windows Vista. Windows Vista does not support the use of exFAT with ReadyBoost, but Windows 7 and Windows 8 do support it. exFAT is also supported under Linux through kernel update.

If you want to optimize performance for removable media such as flash drives, consider formatting the drive with exFAT. However, keep in mind that the device will only be usable in a computer that supports exFAT.

Removing Hardware

Hot-pluggable devices don't follow the type of removal discussed in this section. To remove a USB or FireWire device, or a PC card or memory card, see the section "Disconnecting hot-pluggable devices" earlier in this chapter. This section is about removing more complex devices such as internal components. Before you follow the procedures described in this section, make sure you understand what you're removing and why you're removing it. Do not attempt to fix a problem by removing devices based on sheer guesswork.

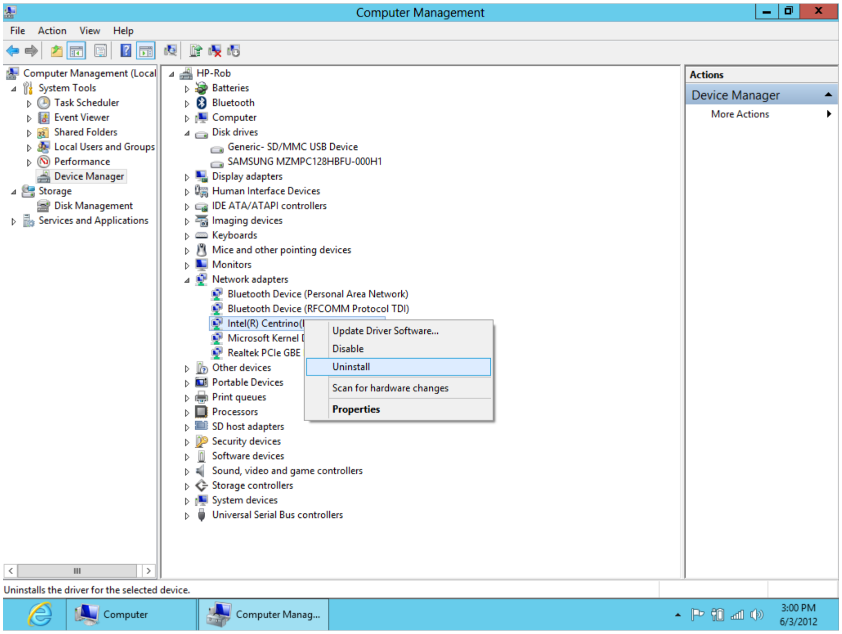
You'll need administrative privileges to perform the tasks described here. It might be best to sign into a user account before you get started so you don't have to rely on privilege escalation along the way.

Before you physically remove a device from the system, first uninstall its driver through Device Manager by following these steps:

1. Open File Explorer and right-click Computer.
2. Choose Manage and then click Device Manager in the left pane to open Device Manager.
3. Expand the category in which the device is listed. Then, right-click the name of the device you intend to remove and choose Uninstall, as in Figure 44.16.

FIGURE 44.16

Uninstall a hardware device.


Computer Management
File Action View Help
Computer Management (Local
System Tools
Task Scheduler
Event Viewer
Shared Folders
Local Users and Groups
Performance
Device Manager
Storage
Disk Management
Services and Applications
HP-Rob
Batteries
Bluetooth
Computer
Disk drives
Generic- SD/MMC USB Device
SAMSUNG MZMPC128HBFU-000H1
Display adapters
Human Interface Devices
IDE ATA/ATAPI controllers
Imaging devices
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Bluetooth Device (Personal Area Network)
Bluetooth Device (RFCOMM Protocol TDI)
Intel(R) Centrino(
Microsoft Kernel
Realtek PCIe GBE
Other devices
Portable Devices
Print queues
Processors
SD host adapters
Security devices
Software devices
Sound, video and game controllers
Storage controllers
System devices
Universal Serial Bus controllers
Update Driver Software...
Disable
Uninstall
Scan for hardware changes
Properties
Actions
Device Manager
More Actions
Computer
Computer Manag...
3:00 PM
6/3/2012

Uninstalls the driver for the selected device.

4. Click OK.

Now you need to shut down the computer, unplug the power cord, and physically remove the device from the system. Then plug the machine back in, start it up, and everything should be back to the way it was before you ever installed the device. If you set a protection point just before installing the hardware, you can return to that protection point just to make sure.

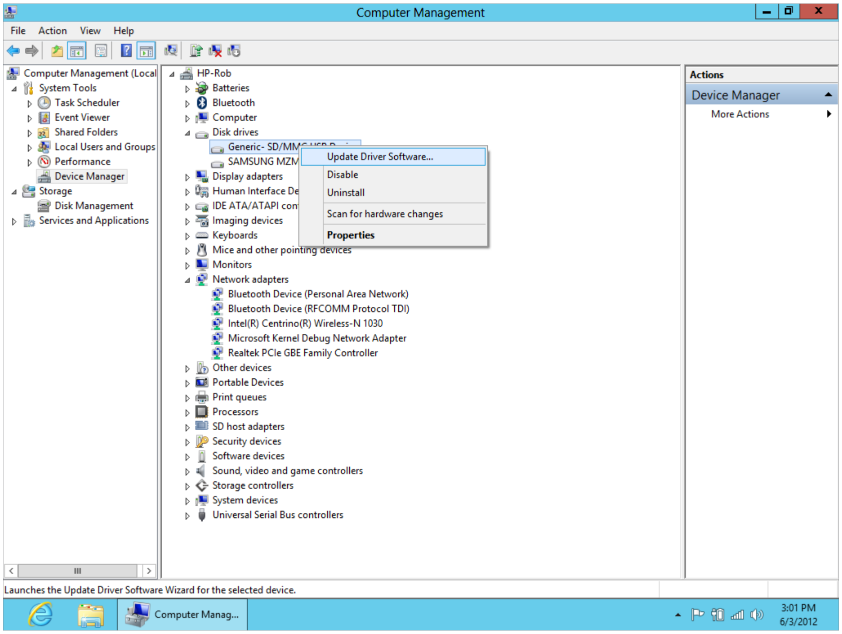
Updating Drivers

At the start of this chapter, we discussed the importance of using Windows 8 drivers with your hardware. The quickest and easiest way to get an updated driver for a device is usually to search for it online by following these steps:

1. Open Device Manager (press Windows+X and choose Device Manager).
2. Right-click the device that needs an updated driver and choose Update Driver Software, as in Figure 44.17.
3. Click Search Automatically For Updated Driver Software and follow the onscreen instructions.

FIGURE 44.17

Update a device driver.


Computer Management
File Action View Help
Computer Management (Local
System Tools
Task Scheduler
Event Viewer
Shared Folders
Local Users and Groups
Performance
Device Manager
Storage
Disk Management
Services and Applications
HP-Rob
Batteries
Bluetooth
Computer
Disk drives
Generic- SD/MM
SAMSUNG MZM
Display adapters
Human Interface De
IDE ATA/ATAPI con
Imaging devices
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Bluetooth Device (Personal Area Network)
Bluetooth Device (RFCOMM Protocol TDI)
Intel(R) Centrino(R) Wireless-N 1030
Microsoft Kernel Debug Network Adapter
Realtek PCIe GBE Family Controller
Other devices
Portable Devices
Print queues
Processors
SD host adapters
Security devices
Software devices
Sound, video and game controllers
Storage controllers
System devices
Universal Serial Bus controllers
Update Driver Software...
Disable
Uninstall
Scan for hardware changes
Properties
Actions
Device Manager
More Actions
Computer Manag...
3:01 PM
6/3/2012

Launches the Update Driver Software Wizard for the selected device.

Often, that's all it takes. You might need to restart the computer after the driver installation is complete.

If that method doesn't work, you may have to go to the product manufacturer's website and search for a Windows 8 driver there. If you find the driver, make sure to follow the manufacturer's instructions carefully to download and install the updated driver. If you can't find a driver specifically for Windows 8, but you do find one for Windows 7 or Vista, that driver should work.

Dealing with Devices that Prevent Windows 8 from Starting

There may be times when a newly installed hardware device prevents Windows 8 from starting properly. In most cases, such devices will be disabled automatically so that Windows 8 can start. If it works that way, you can typically follow the steps described in the preceding section to try and get the updated driver online.

If Windows 8 cannot disable or work with the new device, you may be able to start in Safe Mode with Networking and either get updated drivers there or disable the device manually. You also will need to log in with the Administrator account.

TIP

Windows 8 has a new way to start in Safe Mode. To learn how to boot your computer in Safe Mode, see Chapter 8 of this book.

When you're at the desktop, follow the procedure described under "Updating Drivers" to search for updated drivers. If you cannot find updated drivers, your best bet might be to disable the device by right-clicking its name and choosing Disable from the shortcut menu. Close Device Manager and restart the computer again normally.

If you had to disable the device, it won't work when you restart the computer normally. But at least you can get Windows 8 started and try to find an updated driver through the product manufacturer's website.

Wrap-Up

This chapter has been about connecting, installing, and removing hardware. Some of this material is intended for more advanced users who are familiar with computer hardware. If some of the content is beyond your technical capabilities or comfort level and you need to install or remove some hardware, consider having the job done professionally. The following are the main points to take away from this chapter:

- Most modern devices are hot-pluggable, which means you just connect them to the computer as needed.
- Always read and follow the instructions that come with a device before connecting it to your computer. Winging it will likely result in frustration.
- Hot-pluggable devices that act as storage devices have icons in your Computer folder while connected. You can transfer files to and from such a device using basic techniques described in Chapter 27.
- More-advanced hardware devices generally require shutting down the computer, connecting the device, turning the device on, and then starting the computer again.
- Use the Disk Management tool to partition and format a new drive.
- To remove a hot-pluggable storage device, click the Safely Remove Hardware icon in the Notification area and stop the device before physically removing it.
- To remove other devices, first uninstall them in Device Manager. Then shut down the computer and physically remove the device from the system.

CHAPTER

45

Using Wireless Bluetooth Devices

IN THIS CHAPTER

- What Bluetooth is all about
- Connecting and configuring a Bluetooth adapter
- Associating with different Bluetooth devices
- Connecting to a Bluetooth-enabled personal area network
- Transferring files between two systems using the personal area network

In a nutshell, Bluetooth is a wireless technology that provides wireless communications among computers, printers, mobile phones, tablets, digital cameras, and other electronic devices. You can connect as many as eight devices together with Bluetooth, with one device acting as the master device and up to seven slave devices. (This labyrinth of connected devices is called a *piconet*; you can have up to two piconets.) For example, you could have a desktop PC, a laptop, a smart phone, digital camera, MP3 player, digital video camera, and headphones all linked wirelessly. They could all share a high-speed Internet connection, share data, and use a single printer.

The World of Bluetooth

Bluetooth is a wireless specification intended to replace the need to use physical cables between devices. Bluetooth, for example, enables you to wirelessly connect keyboards, mice, and printers to your laptop or computer. You also can use Bluetooth to wirelessly connect a mobile phone to your computer or laptop to sync settings, transfer photos or videos, or share contacts. Many other types of Bluetooth devices are available as well, including ones that don't even connect to computers or laptops such as devices used inside automobiles, exercise equipment, and games.

Bluetooth uses radio waves to transmit signals, much like many other types of technologies such as FM radio, television, and Wi-Fi. One primary difference between Bluetooth and other radio wave technologies is the distance between devices. Bluetooth is designed for very small distances; the idea is that Bluetooth is personal. You set up connections between your devices in a personal area network (called a PAN). Bluetooth is good within about 164 feet (50 meters), whereas other radio wave technologies can reach miles or hundreds of miles.

At the time of this writing, the current Bluetooth version is 4.0. Bluetooth 4.0 introduced low-energy wireless transfers to allow small, low-powered devices to use Bluetooth. Transfer rates allow data to be sent at up to 25 Mbps (megabytes per second, which is quite fast. If you're thinking of setting up a permanent wireless network between computers, however, you may want to stick with the 802.11 standards described in Chapter 49, "Creating a Home Network." But when it comes to connecting non-computer Bluetooth devices, wirelessly connecting a printer, or occasionally transferring files between computers, Bluetooth can't be beat.

The following are some Bluetooth buzzwords and concepts that you'll encounter in this section as well as in the instructions that come with Bluetooth devices:

- **Discovery:** A Bluetooth device finds other Bluetooth devices to which it can connect through a process called *discovery*. To prevent Bluetooth devices from connecting at random, discovery is usually turned off by default on a Bluetooth device. You manually turn on discovery when you are ready for that device to be discovered. After a device has been discovered, you can turn discovery off.
- **Discoverable:** A *discoverable* (or visible) Bluetooth device is one that has discovery turned on, so other Bluetooth devices within range can see and connect to the device.
- **Pairing:** Once two or more Bluetooth devices have discovered one another and have been *paired* (connected), you can turn off their discovery features. The devices will forever be able to connect to one another, and unauthorized foreign devices will not be able to discover and hack into the paired devices.
- **Encryption:** A process by which transferred data is encoded to make it unreadable to any unauthorized device that picks up a signal from the device. Bluetooth offers powerful 128-bit data encryption to secure the content of all transferred data.

- **Passkey:** Similar to a password, only devices that share a passkey can communicate with one another. This is yet another means of preventing unauthorized access to data transmitted across Bluetooth radio waves.
- **Bluejacking:** A process by which one user sends a picture or message to an unsuspecting person's Bluetooth device.

A non-computer gadget such as a smart phone, MP3 player, or electronic pedometer that supports Bluetooth is called a *Bluetooth device*. A standard desktop PC or laptop computer usually isn't a Bluetooth device, although many laptops do include built-in Bluetooth capabilities. As a rule, it's easy to turn your PC or laptop into a Bluetooth device. You just plug a Bluetooth USB adapter — a tiny device about the size of your thumb — into any available USB port, and presto, your computer is a Bluetooth device. Making your computer into a Bluetooth device doesn't limit it in any way. It just extends the capabilities of your computer so that you can do things such as:

- Connect a Bluetooth mouse, keyboard, or other pointing device
- Use the Devices tool in the PC Settings area to add a Bluetooth device
- Use the Add Printer Wizard to use a Bluetooth printer wirelessly
- Use a Bluetooth-enabled phone or dial-up device as a modem
- Transfer files between Bluetooth-ready computers or devices by using Bluetooth
- Join an ad hoc personal area network (PAN) of Bluetooth-connected devices (an ad hoc network is an informal network, where devices connect and disconnect on an as-needed basis, without the need for a central hub or base station)

When you install a Bluetooth adapter on your PC or laptop, you also install *radio drivers*. Windows 8 comes with many radio drivers preinstalled.

NOTE

If a built-in radio driver doesn't work with your device, install the drivers that came with the device per the device manufacturer's instructions.

Configuring Your Bluetooth Adapter

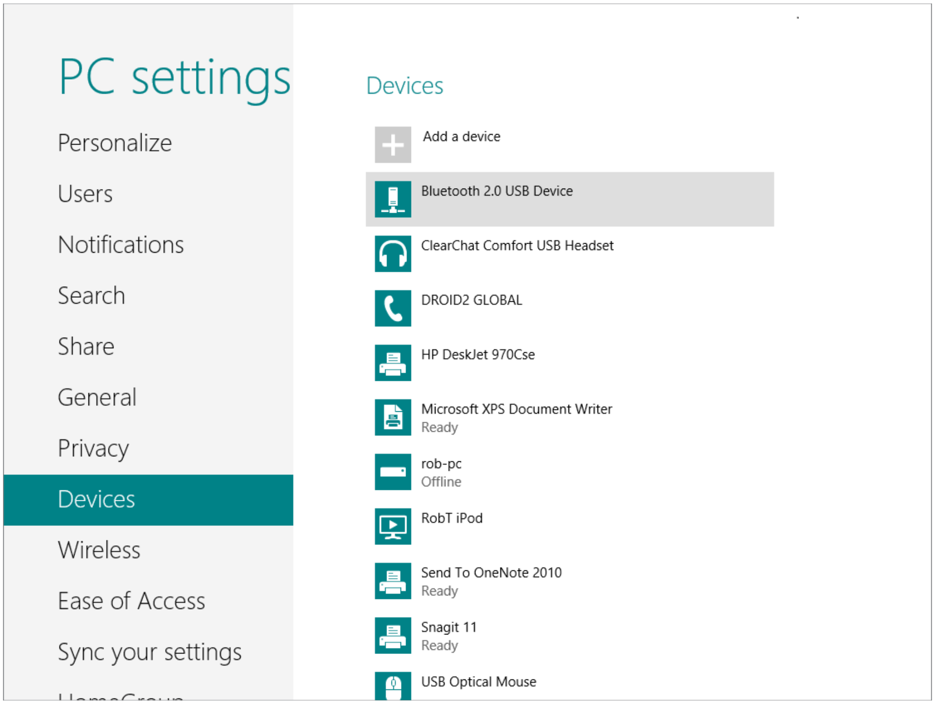
If you plan to share a single Internet account among several computers or Bluetooth devices, you should install your first Bluetooth USB adapter in the computer that connects directly to the router. That will give other Bluetooth devices that you add later easy access to the Internet through that computer's Internet connection.

After you've installed a Bluetooth adapter, you'll find a new icon named Bluetooth 2.0 USB Device (or similar) in the PC Settings Devices list. You also can view Bluetooth information in the Device Manager.

To view the Devices list, show the Charms Bar, choose Settings, Click Change PC Settings at the bottom of the PC Settings pane, and click Devices. Figure 45.1 shows the Bluetooth 2.0 USB Device on a computer.

FIGURE 45.1

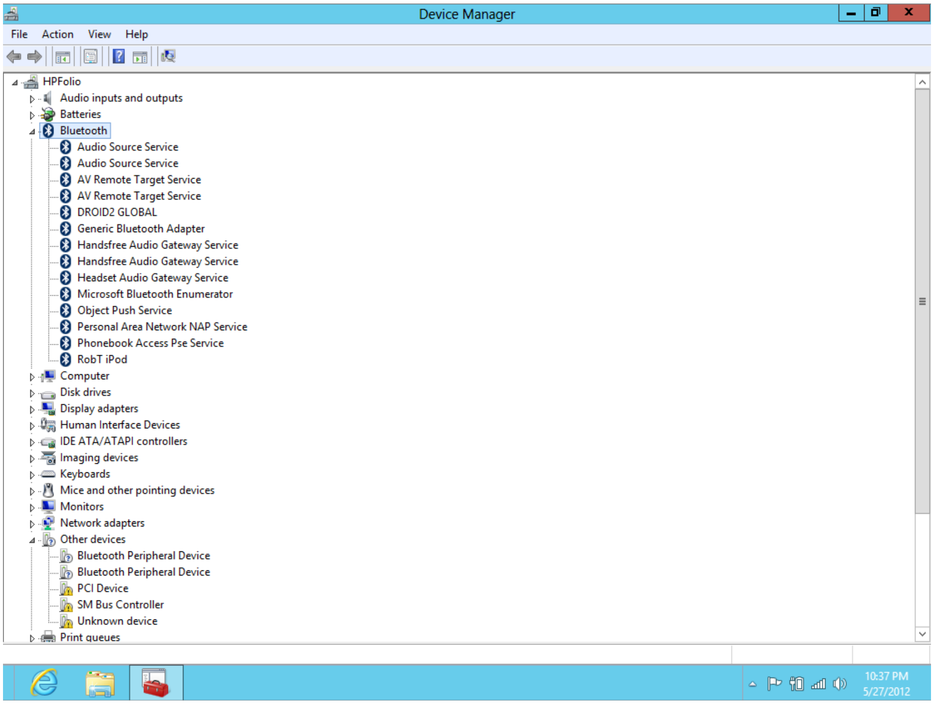
Bluetooth USB device showing on the PC Settings page


PC settings
Personalize
Users
Notifications
Search
Share
General
Privacy
Devices
Wireless
Ease of Access
Sync your settings
Devices
Add a device
Bluetooth 2.0 USB Device
ClearChat Comfort USB Headset
DROID2 GLOBAL
HP DeskJet 970Cse
Microsoft XPS Document Writer
Ready
rob-pc
Offline
RobT iPod
Send To OneNote 2010
Ready
Snagit 11
Ready
USB Optical Mouse

To see how the same device looks in Device Manager, show the desktop and press Windows+X. Choose Device Manager and expand the Bluetooth list, as shown in Figure 45.2. Your list may be different than the one shown here, but the important thing to note is that you can view and manage the Bluetooth device here as well.

FIGURE 45.2

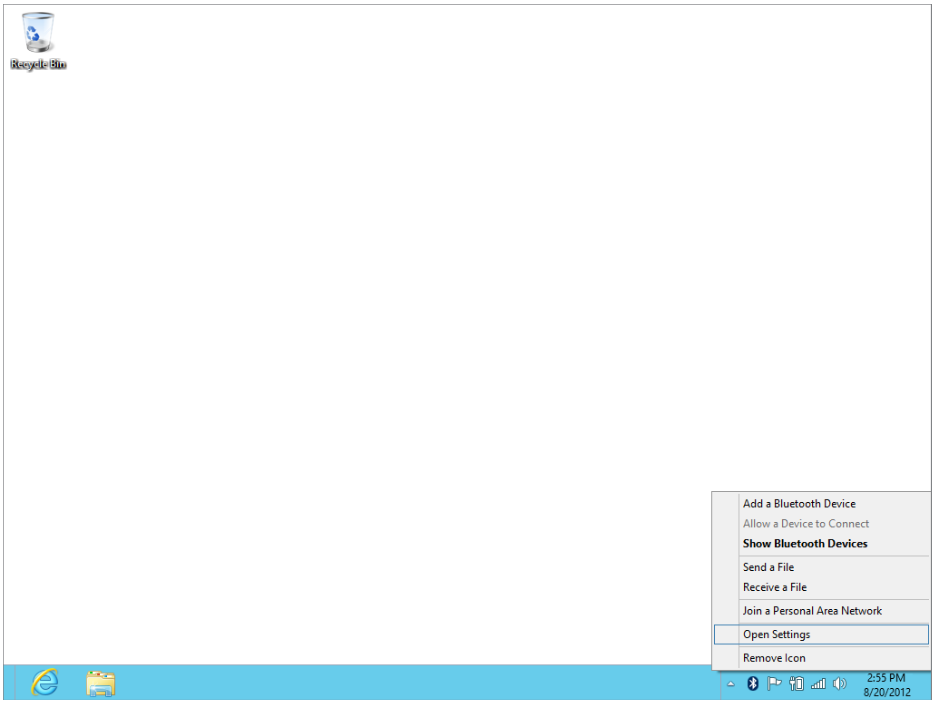
Bluetooth USB device showing on the Devices list


Device Manager
File
Action
View
Help
HPFolio
Audio inputs and outputs
Batteries
Bluetooth
Audio Source Service
Audio Source Service
AV Remote Target Service
AV Remote Target Service
DROID2 GLOBAL
Generic Bluetooth Adapter
Handsfree Audio Gateway Service
Handsfree Audio Gateway Service
Headset Audio Gateway Service
Microsoft Bluetooth Enumerator
Object Push Service
Personal Area Network NAP Service
Phonebook Access Pse Service
RobT iPod
Computer
Disk drives
Display adapters
Human Interface Devices
IDE ATA/ATAPI controllers
Imaging devices
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Other devices
Bluetooth Peripheral Device
Bluetooth Peripheral Device
PCI Device
SM Bus Controller
Unknown device
Print queues
10:37 PM
5/27/2012

You also will have a Bluetooth icon (which looks very similar to the letter B) in the Notification area of the Windows desktop taskbar. The Bluetooth Settings screen will be your central point for installing Bluetooth. To open that screen, use the earlier procedure from the Charms Bar, or double-click the Bluetooth Devices Notification area icon (see Figure 45.3). Initially, the Devices list will be empty. If you don't see a Bluetooth Devices icon in your Notification area, make sure to select the Show The Bluetooth Icon In The Notification Area check box.

FIGURE 45.3

Bluetooth icon shown in the Notification area


Recycle Bin
Add a Bluetooth Device
Allow a Device to Connect
Show Bluetooth Devices
Send a File
Receive a File
Join a Personal Area Network
Open Settings
Remove Icon
2:55 PM
8/20/2012

As you install devices and join devices to a Bluetooth PAN, you'll see the names of those devices listed on that screen. Previously, in Figure 45.1, for example, a Droid2 smart phone was connected to the Bluetooth adapter on a laptop. The Devices list shows a setting called DROID2 GLOBAL.

The shortcut icon that appears when you right-click the Notification area provides options for adding a Bluetooth device, sending and receiving files, and joining a PAN.

Adding Bluetooth-Enabled Devices

Many different types of Bluetooth devices are available on the market. Most have some means of making the device discoverable (visible) to other devices. Whether you have to make your PC discoverable to install a device depends on the type of installation you're about to perform. As always, you need to read the documentation that came with your device for specifics. But if you do need to make your computer discoverable, it's simply a matter of choosing the Allow A Device To Connect option, visible in Figure 45.3.

On the shortcut menu for the Bluetooth Devices Notification icon, clicking the Add A Bluetooth Device option opens the PC Settings window with the Devices option showing. Windows attempts to locate any devices available. The sections that follow show you how easy it is to connect Bluetooth devices to your laptop or computer. This example shows you how to set up an Android-based smart phone to your computer. We then walk you through the process of transferring files to and from that device.

Connecting an Android smart phone

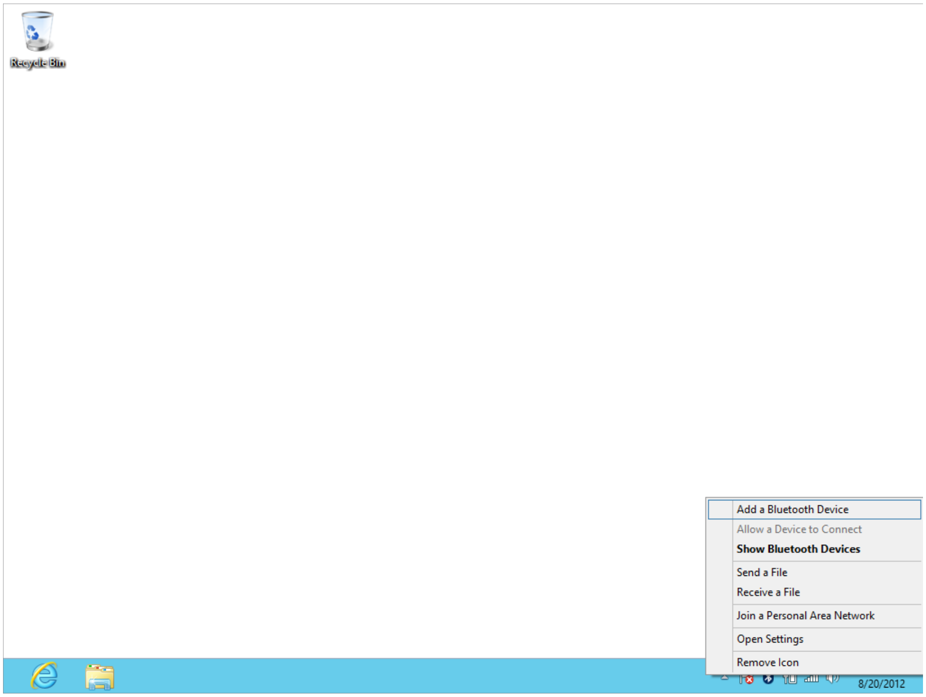
To add an Android smart phone to your computer using Bluetooth, you must have an Android device that supports Bluetooth. Also, your computer or laptop must have built-in Bluetooth or a Bluetooth adapter plugged into it.

Use the following steps to connect the Android to your Windows computer:

1. On the Windows 8 desktop, click the Bluetooth icon on the notification bar.
2. Click Add A Bluetooth Device, as shown in Figure 45.4. The Devices screen appears.

FIGURE 45.4

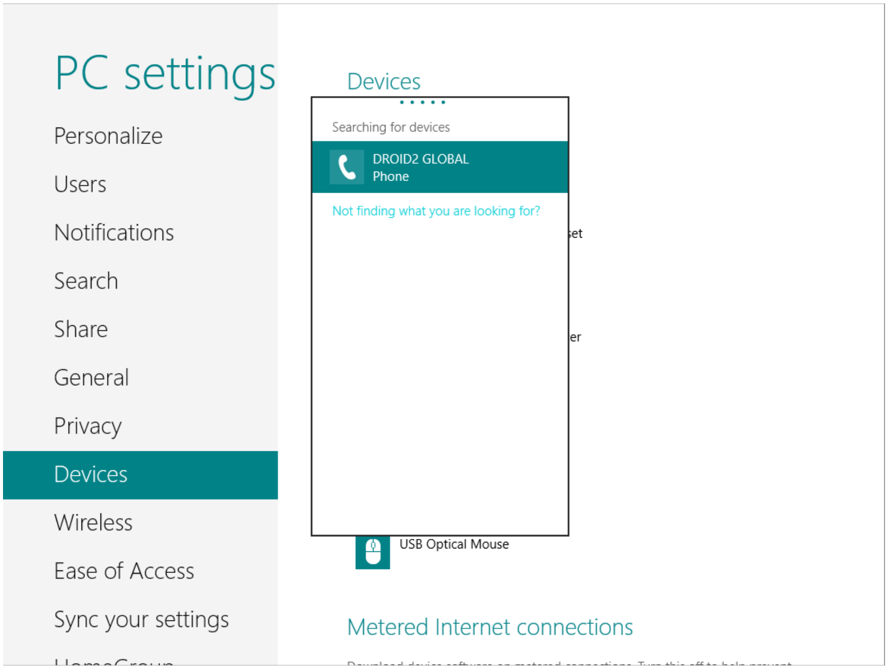
Choose to add a Bluetooth device.


Recycle Bin
Add a Bluetooth Device
Allow a Device to Connect
Show Bluetooth Devices
Send a File
Receive a File
Join a Personal Area Network
Open Settings
Remove Icon
8/20/2012

3. Turn on the Bluetooth feature on the Android phone. How you do that depends on your version of Android and the model of phone. The Droid2 device listed use the Wireless & Networks tool in the Settings menu. From here, you can turn on the Bluetooth feature and then use the Bluetooth settings item to make the phone discoverable. Windows searches for all Bluetooth devices that are nearby, including the phone.
4. When the computer and phone find each other, a window similar to the one shown in Figure 45.5 appears. Click the item you want to connect with in Windows.
5. A message appears on both your phone and in Windows. A passcode should appear that is identical on both devices. If they are, click Yes on your phone and in Windows to set up the Bluetooth connection. Figure 45.6 shows an example of a passcode that appears during this transaction.

FIGURE 45.5

Windows finds the Android phone device.

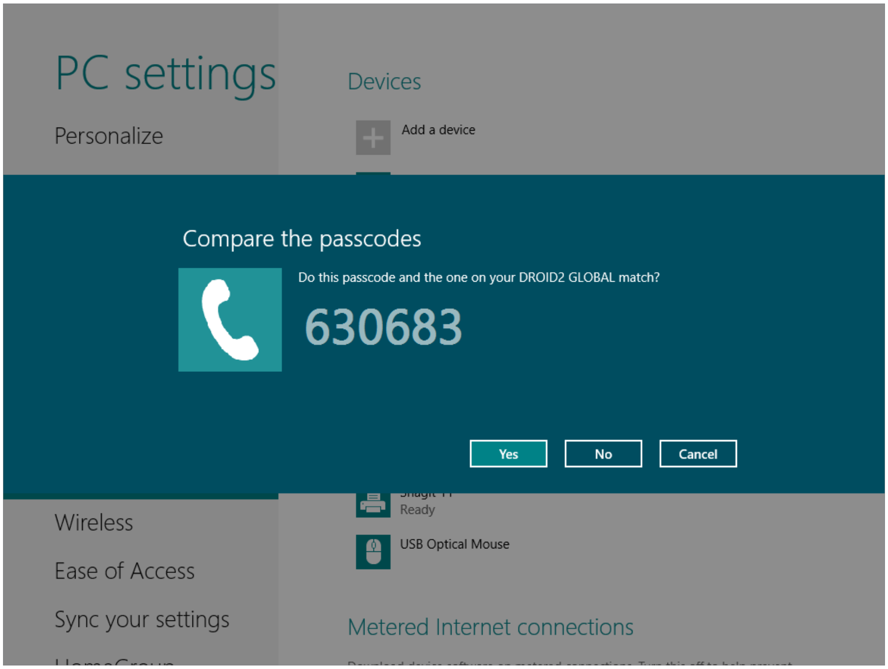

PC settings
Personalize
Users
Notifications
Search
Share
General
Privacy
Devices
Wireless
Ease of Access
Sync your settings
Devices
Not finding what you are looking for?
USB Optical Mouse
Metered Internet connections

Searching for devices

DROID2 GLOBAL
Phone

FIGURE 45.6

Windows and your phone display a passcode.



PC settings
Devices
Personalize
Add a device
Yes
No
Cancel
Ready
USB Optical Mouse
Wireless
Ease of Access
Sync your settings
Metered Internet connections

Compare the passcodes

Do this passcode and the one on your DROID2 GLOBAL match?

630683

Windows sets up a connection between the two devices.

NOTE

On some devices, you may need to type in the passcode that appears on the Windows screen. If so, be aware that you have only a short amount of time to enter the code (approximately 60 seconds) before Windows and your device decide that a connection is not desired at this time. If the passcode screen disappears, you have to restart the connection process to get the two devices to “see” each other again.

Joining a personal area network

Once your two devices are connected, you can join them as a personal area network (PAN) so you can transfer files between them using the Bluetooth connection. To do this, use the following steps:

1. Click the Bluetooth icon on the desktop notification bar.
2. Click the Join A Personal Area Network option, as shown in Figure 45.7. The Devices And Printers window appears, as shown in Figure 45.8.
3. Click the device you want to join to the PAN, which in our case is the DROID2 GLOBAL phone.
4. Click Connect Using – Access Point. Once connected to the PAN, the command choices change to Disconnect From Device Network. Your phone will say something like Connected To Pan or similar.

FIGURE 45.7

Setting up a personal area network

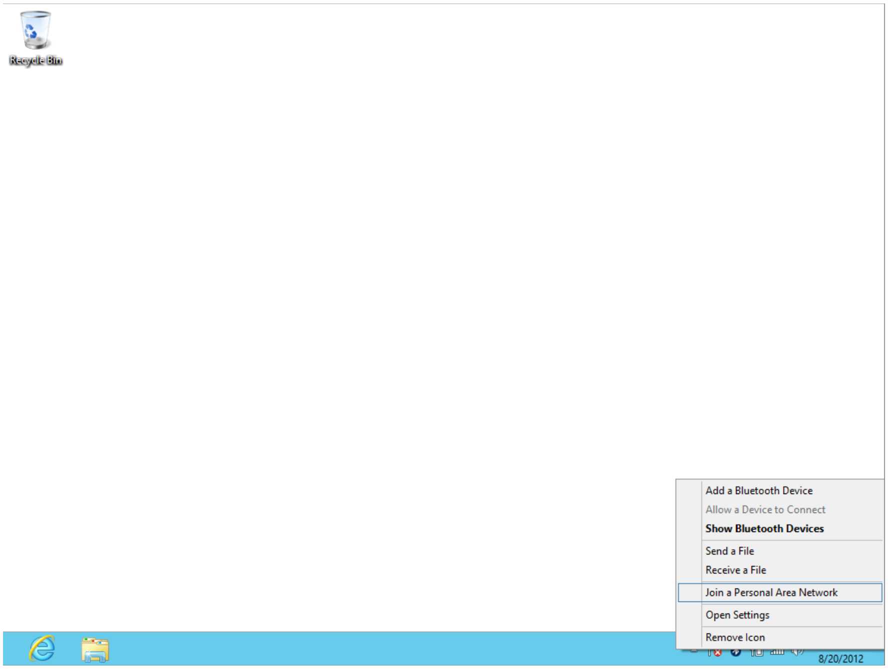
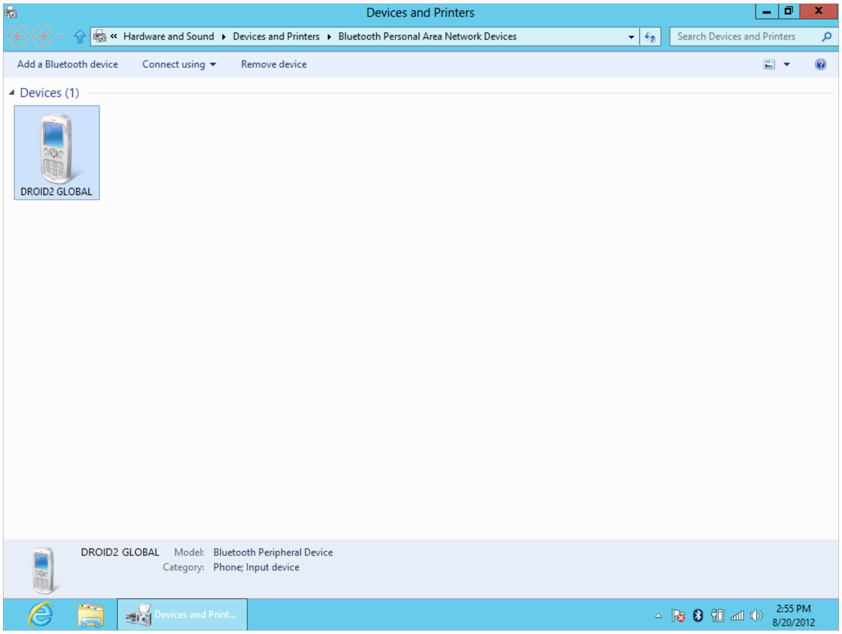

Recycle Bin
Add a Bluetooth Device
Allow a Device to Connect
Show Bluetooth Devices
Send a File
Receive a File
Join a Personal Area Network
Open Settings
Remove Icon
8/20/2012

FIGURE 45.8

Selecting a device to connect to the PAN


Devices and Printers
Hardware and Sound
Devices and Printers
Bluetooth Personal Area Network Devices
Search Devices and Printers
Add a Bluetooth device
Connect using
Remove device
Devices (1)
DROID2 GLOBAL
Devices and Print...
2:55 PM
8/20/2012

DROID2 GLOBAL Model: Bluetooth Peripheral Device
Category: Phone; Input device

Now that your devices are joined to a PAN, you can transfer files between the two. Read the following two sections to find out how to do this.

Receiving files from a Bluetooth device

There's not much you can do when you connect a smart phone to a computer via Bluetooth. One feature that is handy, however, is the feature to send files from your phone to Windows. You can, for example, send picture or video files from your phone to your computer. To do this, use the following steps:

1. Click the Bluetooth icon on the desktop notification bar.
2. Click Receive A File, as shown in Figure 45.9. The Bluetooth File Transfer window appears (see Figure 45.10). Windows 8 now waits until files from your phone begin transmitting to your computer.

FIGURE 45.9

Receive a file from a smart phone

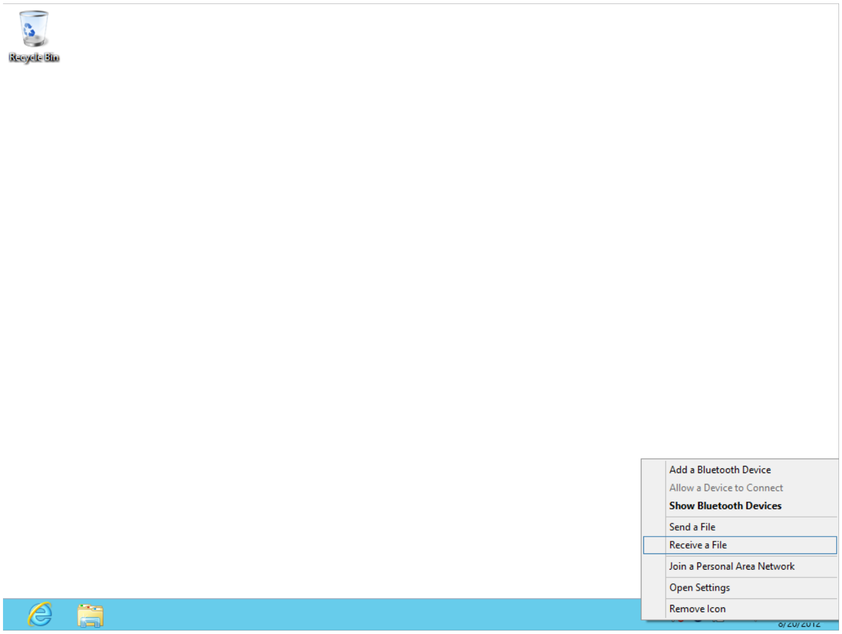
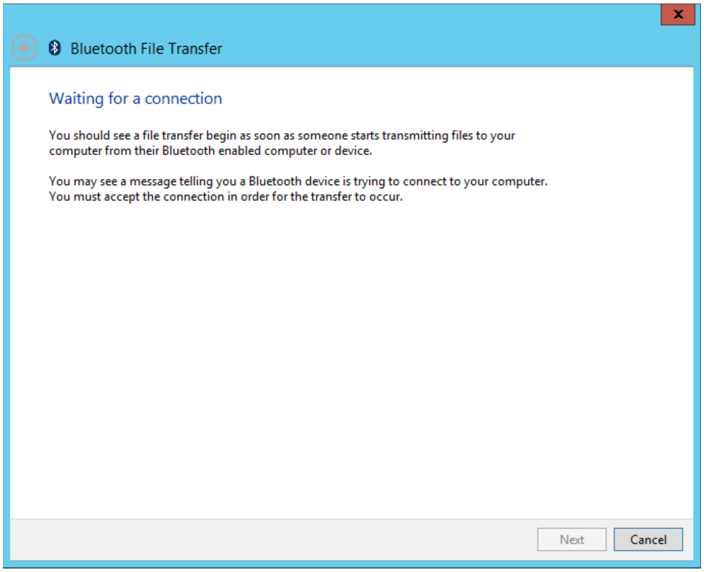

Recycle Bin
Add a Bluetooth Device
Allow a Device to Connect
Show Bluetooth Devices
Send a File
Receive a File
Join a Personal Area Network
Open Settings
Remove Icon

FIGURE 45.10

The Bluetooth File Transfer window


Bluetooth File Transfer
Next
Cancel

Waiting for a connection

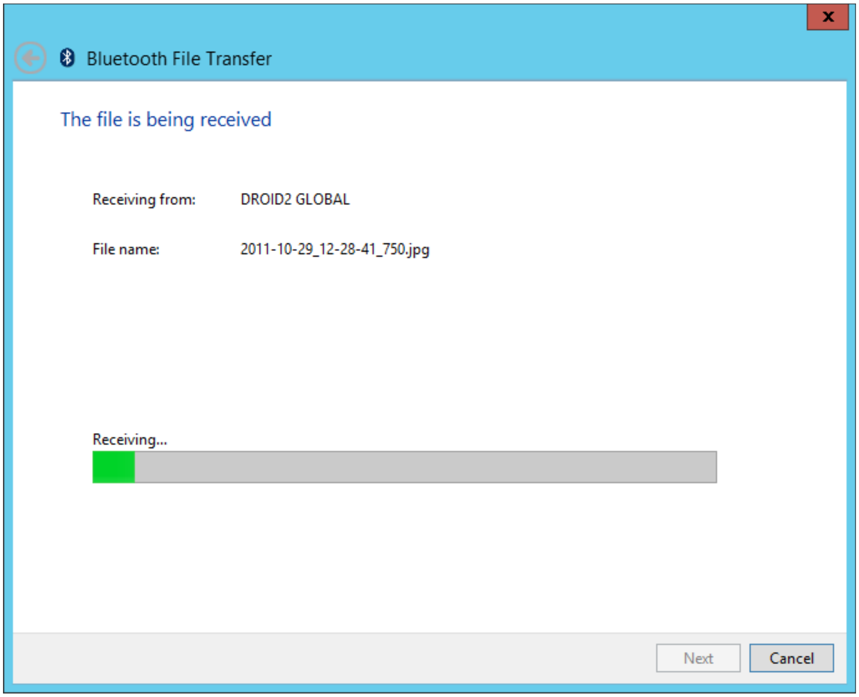
You should see a file transfer begin as soon as someone starts transmitting files to your computer from their Bluetooth enabled computer or device.

You may see a message telling you a Bluetooth device is trying to connect to your computer. You must accept the connection in order for the transfer to occur.

3. On your phone, locate the feature that enables you to send files to a remote location or a media-sharing app. Some Android-based phones include an app called Media Share. With this app, you can share media files (pictures, videos, and audio) with devices on a Bluetooth connection.
4. On your phone, select the file you want to transfer to Windows and transfer it.
5. In Windows, the Bluetooth File Transfer window shows device information, file information, and progress of the file transfer. Figure 45.11 shows an example. In Figure 45.12, the transfer is finished and you can see the filename and size of file, and browse to the location to which it was saved.
6. Click Finish when you are sharing files from the phone.

FIGURE 45.11

Receiving a file from a smart phone



The file is being received

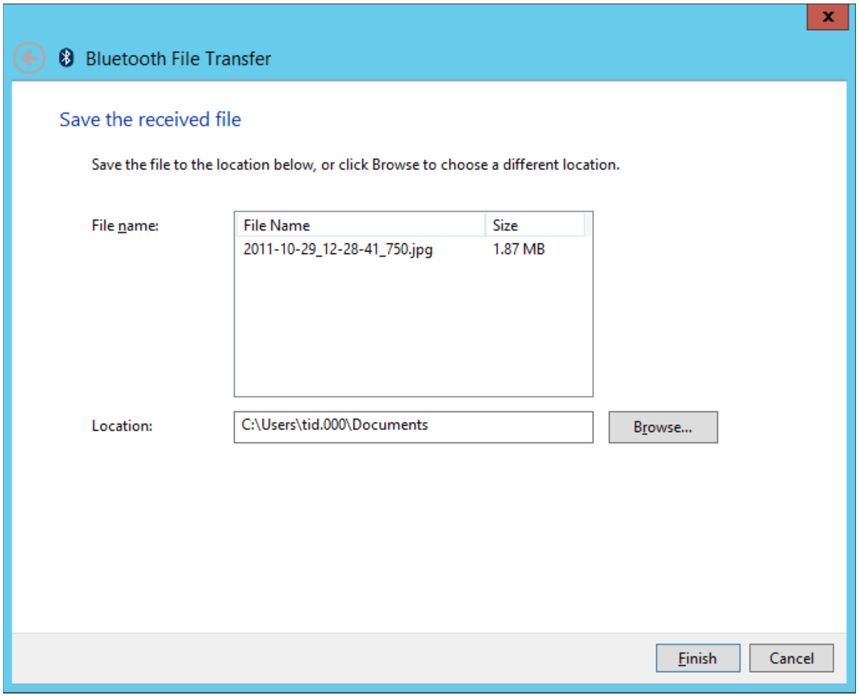
Receiving from: DROID2 GLOBAL

File name: 2011-10-29_12-28-41_750.jpg

Receiving...

FIGURE 45.12

After Windows receives the transferred file



Save the received file

Save the file to the location below, or click Browse to choose a different location.

File name:

File Name	Size
2011-10-29_12-28-41_750.jpg	1.87 MB

Location: C:\Users\tid.000\Documents

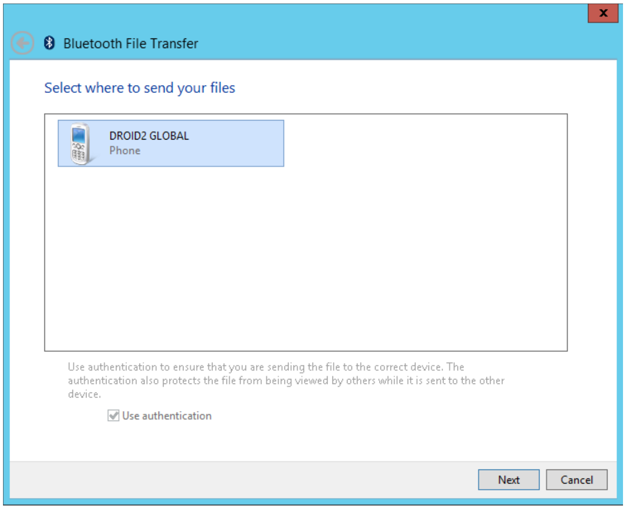
Sending files to a Bluetooth device

Not only does Windows 8 make it easy to receive files from a Bluetooth device, such as an Android-based smart phone, it also makes it easy to send files to a device:

1. Click the Bluetooth icon on the desktop notification bar.
2. Click Send A File. You can see this option in Figure 45.9 earlier in this chapter.
3. Select the Bluetooth device to which you want to send the file. In the example shown in Figure 45.13, our choice is the DROID2 GLOBAL device. In some cases, you may have multiple devices showing, so be sure to choose the correct one.

FIGURE 45.13

Select a device to send a file to.



Bluetooth File Transfer
Select where to send your files
DROID2 GLOBAL
Phone
Next
Cancel

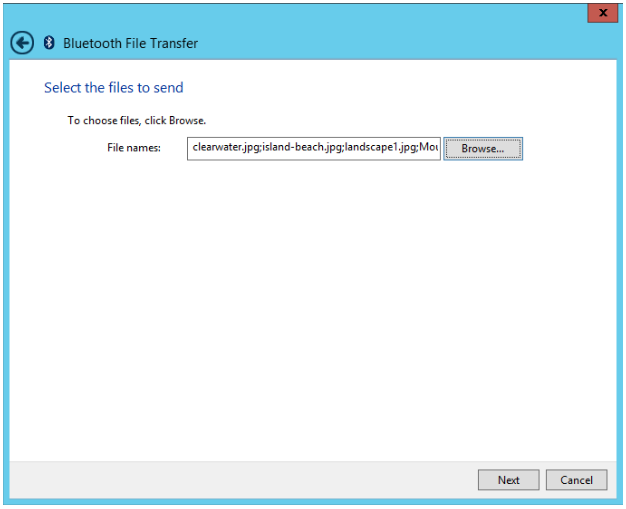
Use authentication to ensure that you are sending the file to the correct device. The authentication also protects the file from being viewed by others while it is sent to the other device.

☑ Use authentication

4. Click Next.
5. Specify the path and name of the file you want to share, as shown in Figure 45.14. Use the Browse button to locate the file or files to send. If you choose multiple files, they are separated by a semicolon.

FIGURE 45.14

Select files to send.



Bluetooth File Transfer
Select the files to send
Browse...
Next
Cancel

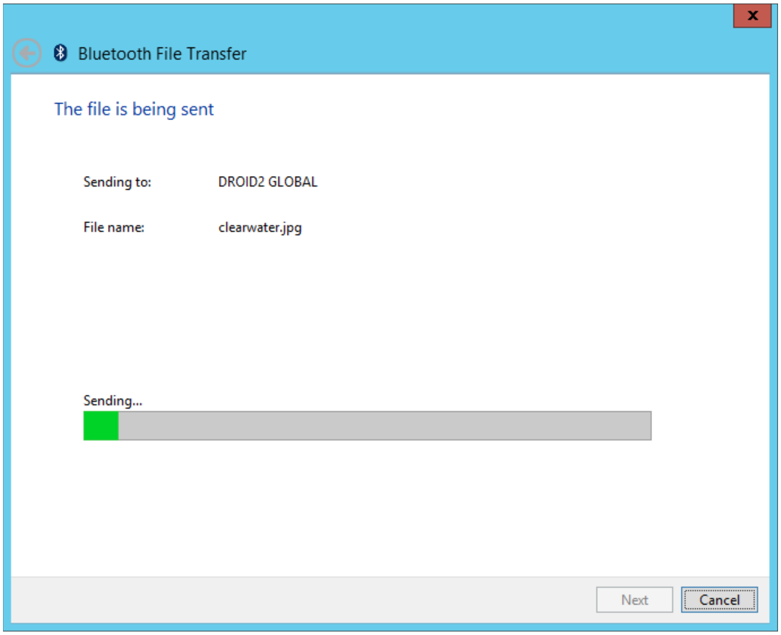
To choose files, click Browse.

File names: clearwater.jpg;island-beach.jpg;landscape1.jpg;Mo

6. Click Next. The Bluetooth File Transfer window appears showing the progress of the file being sent (see Figure 45.15). Make sure your phone is turned on. You may need to confirm the file transfer on your phone.

FIGURE 45.15

Sending files from Windows to a smart phone



Bluetooth File Transfer

The file is being sent

Sending to: DROID2 GLOBAL

File name: clearwater.jpg

Sending...

Windows sends the file(s) from your computer to your phone. Depending on the size of the files, the transfer process may take several minutes.

Creating a Bluetooth personal area network

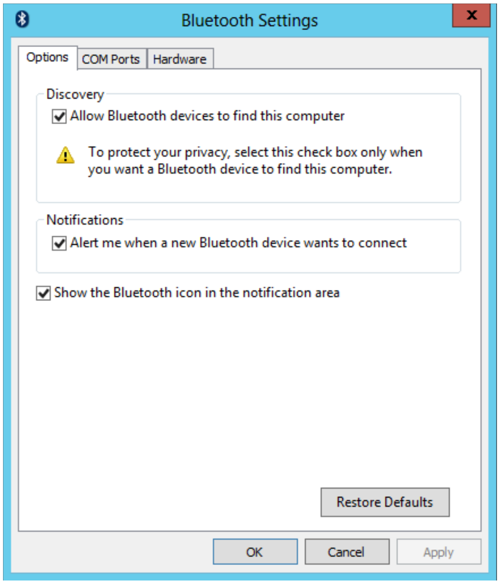
You've seen how to create personal area network to allow a smart phone to connect to your computer. You also can create a Bluetooth PAN as a short-range wireless network to connect other types of devices together wirelessly. It's commonly used to connect a laptop to a desktop PC, although it can be used to connect other types of Bluetooth devices. As a rule, there's not much to joining Bluetooth devices to a Bluetooth network. Most of the action takes place automatically behind the scenes.

To understand the basic procedure, let's assume you already have a desktop computer with a functional Internet connection. You've already installed a Bluetooth USB adapter on that computer, so it's now a Bluetooth device. On that desktop computer, click the

Bluetooth adapter icon in the Notification area of the Windows desktop. Click Open Settings and make sure Allow Bluetooth Devices To Find This Computer is selected, as shown in Figure 45.16.

FIGURE 45.16

Make sure Bluetooth is set up on both computers.



Discovery

☑ Allow Bluetooth devices to find this computer

To protect your privacy, select this check box only when you want a Bluetooth device to find this computer.

Notifications

☑ Alert me when a new Bluetooth device wants to connect

☑ Show the Bluetooth icon in the notification area

On a laptop computer (or second computer), activate Bluetooth or, if necessary, plug in a second Bluetooth USB adapter. You want to connect the laptop to the desktop in a personal area network. To do so, starting from the laptop computer, follow these steps:

1. Right-click the Bluetooth Devices Notification area icon and choose Join A Personal Area Network. A list of Bluetooth devices should appear. If at least one device does not appear, click the Add A Bluetooth Device button and follow the steps to locate a Bluetooth-enabled computer. When the search completes, you should see a list of all of the available devices.
2. Click the name of the computer to which you want to connect, and click the Next button.
3. Choose a passkey method from the next wizard screen (the Choose A Passkey For Me option is sufficient), and then click Next.

4. You'll be given a passkey. On the other computer, you'll be asked to type in that same passkey. Type in the passkey exactly as shown in the first computer and click Next.
5. Follow any remaining instructions in the wizards on both computers until you get to the final page and then click the Close button in each wizard.

Once the connection is established, you should have Internet access on both computers. You can share printers and folders, and move and copy files between computers using the techniques described in Chapter 28, "Managing Files and Folders," and Chapter 32, "Installing and Managing Printers."

Note, however, that if you made the Bluetooth connection to only one computer in an existing LAN, you'll have access only to the shared resources on the Bluetooth-enabled computer, not all the computers in the LAN.

Troubleshooting a Bluetooth network connection

If you can't get any connectivity at all using Bluetooth, try the following remedy:

1. Go to the computer that's having trouble connecting to the PAN.
2. Open the Network And Sharing Center by pressing Windows+X and choosing Control Panel ➪ Network and Internet ➪ Network and Sharing Center.
3. Scroll down to the Bluetooth Network Connection group. If you're unable to locate the Bluetooth Network Connection group, you'll need to follow the steps outlined earlier, including entering a passkey from the other system in the PAN.

By the time you complete the wizards on both screens, you should have a connection. The Network and Sharing Center folders on each PC should have similar Bluetooth network entries.

Sharing an Internet connection

If you're unable to get Internet connectivity from the computer you are connecting to the PAN that already has Internet connectivity, go to the computer that's connected to the cable modem or router. Open Network and Sharing Center and click the network item next to the Connections label. In the Activity area, click Properties and click the Sharing tab. Choose Allow Other Network Users To Connect Through This Computer's Internet Connection and click OK twice to save your settings.

If you still have problems connecting to the Internet, check the settings for the Windows Firewall:

1. Display the Charms Bar, choose Search, type **fire**, click Settings, and then click Windows Firewall in the Settings area.
2. Click Allow An App Through Windows Firewall.

3. Click Change Settings. In the Allowed Apps And Features area, select a networking option, such as Core Networking, and click Private And Public to open the firewall for this feature. Find other network-related features and do the same.
4. Click OK.

With these settings, you should now be able to connect to the Internet from the other computers in the PAN.

Remember that many different Bluetooth devices are available on the market. If none of the techniques described here help you make the connection between two computers in a personal area network, be sure to refer to the instructions that came with your Bluetooth device.

Wrap-Up

This chapter has been about installing and configuring Bluetooth devices and Bluetooth networks. Bluetooth devices provide an excellent alternative to many commonly wired devices. Also, they usually are fast and easy to set up and can provide a great way for users to communicate between computers without having to rely on more complex networking. Here's a recap of the technologies covered in this chapter:

- Bluetooth is currently at version 4.0 and allows you to connect smart phones, mice, keyboards, exercise equipment, and other Bluetooth devices.
- To turn a computer into a Bluetooth device, simply connect a Bluetooth USB adapter to a USB port on the computer.
- To connect a Bluetooth device to a computer, activate discovery on the device, bring it within range of the computer, click the Bluetooth Devices icon in the Notification area, and choose Add A Device.
- To create a personal area network between two or more computers, add a Bluetooth USB adapter to each computer, or use the built-in Bluetooth if applicable. Then, click the Bluetooth Devices Notification area icon and choose Join A Personal Area Network.
- Regardless of what type of device you intend to connect to your computer, always read the instructions that came with the device first.

CHAPTER 46

Syncing Devices

IN THIS CHAPTER

Synchronizing with content on the network

Setting schedules and events for synchronizations

Dealing with conflicts that occur in synchronizations

Dealing with other types of devices

If you've ever had files on a remote device that you wish you could take with you and keep in sync, Windows Sync Center and the Offline File settings can help fulfill your need. These two solutions work together to relieve you of the time-consuming chore of copying data between a remote system and your local computer. This chapter discusses the many options for scheduling and conflict resolution that Sync Center provides.

Sync Center works with many devices, including network drives, flash drives, and portable music players. We briefly discuss these topics, but the majority of functionality regarding synchronizing these devices is included with the software that comes with the device.

Syncing with Network Files

Windows synchronization is most commonly used for updating offline files. This is most frequently used for laptop computers but can also be used with desktop systems. To perform synchronization, you'll need to have a network location set up on your local computer that connects to a server (see Chapter 50). You are able to set up offline files to synchronize the data on the server to your local system. This makes the content available when you are away from that server.

NOTE

Don't confuse Sync Center with the cloud-based Skydrive. At this time, they are two distinct features of Windows 8. In the future, Microsoft may release more Sync Center features into its Skydrive product. If you want to learn more about the new Skydrive app, read Chapter 22.

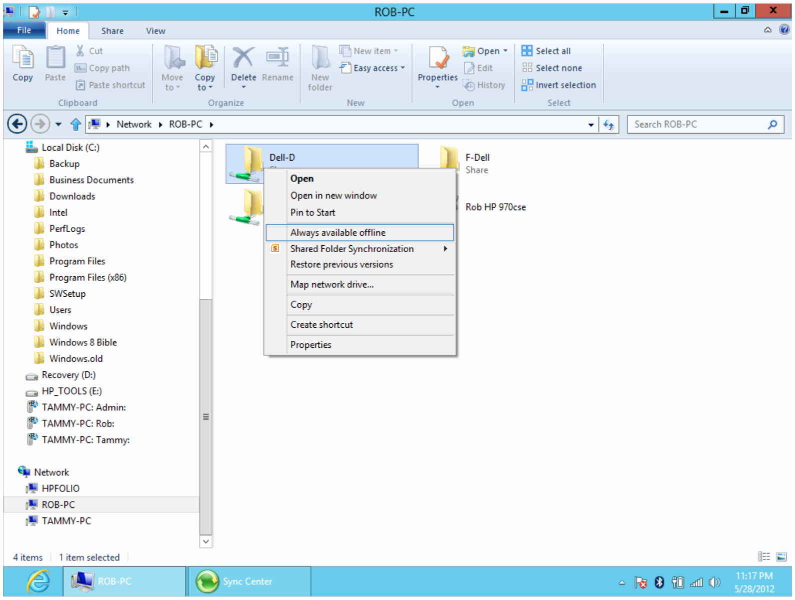
You can edit your data while disconnected from the network, and Sync Center makes sure that the changes you made while disconnected are sent back to the server when you reconnect to the network. In the event someone has edited or changed the files on the server, Sync Center asks for your assistance. Setting up offline files requires several steps, the first of which is to make the files and folders available offline.

Using Sync Center for offline files

The first step to setting up offline files is to add a network location to your system if you don't already have one. This is covered in more detail in Chapter 51. When you have a network location configured, clicking your Computer link opens a menu that looks similar to the one in Figure 46.1.

FIGURE 46.1

A list of network locations


ROB-PC
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Network ▸ ROB-PC ▸
Search ROB-PC
Local Disk (C:)
Backup
Business Documents
Downloads
Intel
PerfLogs
Photos
Program Files
Program Files (x86)
SWSetup
Users
Windows
Windows 8 Bible
Windows.old
Recovery (D:)
HP_TOOLS (E:)
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
HPFOLIO
ROB-PC
TAMMY-PC
Dell-D
F-Dell
Share
Rob HP 970cse
Open
Open in new window
Pin to Start
Always available offline
Shared Folder Synchronization
Restore previous versions
Map network drive...
Copy
Create shortcut
Properties
4 items
1 item selected
ROB-PC
Sync Center
11:17 PM
5/28/2012

When you have at least one network location configured, you need to right-click the location and select Always Available Offline. A dialog box appears showing the progress of the synchronization. When the content has synchronized to your local system, you can disconnect from the network and still use the files that once existed only on the server. Right-click the network location again and this time select Sync. This ensures that the two locations — the server and your local computer — are synchronized. This process could be a little tedious if you always needed to remember to sync your files before disconnecting. To automate this process, you can schedule the task of synchronizing the files and folders.

NOTE

Synchronizing with network locations works only on network locations local to your network. You are not able to use File Transfer Protocol (FTP) network locations to synchronize content. The Always Available Offline option is not available for network locations not connected to the local network.

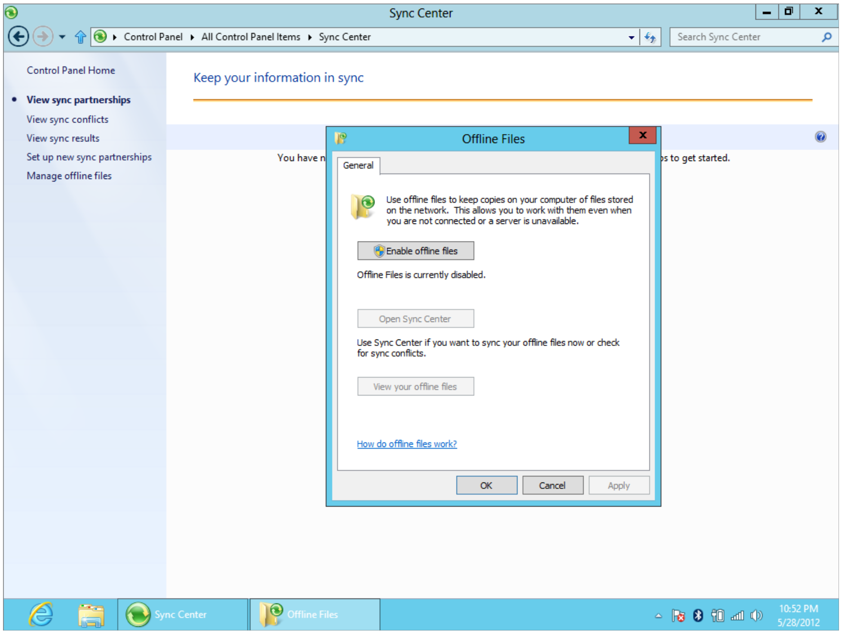
Enable offline files

Before you can manage or view offline files, you must enable the offline files feature in Windows 8. By default it is turned off. To enable it, perform the following steps:

1. Open the Charms Bar, click Search, and type **Sync**. Click Settings and then click the Sync Center item on the Settings screen. You also can launch Sync Center by opening the Control Panel, choosing Large Icons or Small Icons from the View By drop-down list, and clicking the Sync Center icon.
2. Click the Manage Offline Files link on the left side of the Sync Center window. The Offline Files dialog box opens, as shown in Figure 46.2.
3. Click the Enable Offline Files button.

FIGURE 46.2

Sync Center with the default appearance for offline files


Sync Center
Control Panel ▸ All Control Panel Items ▸ Sync Center
Search Sync Center
Control Panel Home
View sync partnerships
View sync conflicts
View sync results
Set up new sync partnerships
Manage offline files
Keep your information in sync
You have n
ps to get started.
Offline Files
General
Enable offline files
Open Sync Center
View your offline files
How do offline files work?
OK
Cancel
Apply
Sync Center
Offline Files
10:52 PM
5/28/2012

Use offline files to keep copies on your computer of files stored on the network. This allows you to work with them even when you are not connected or a server is unavailable.

Offline Files is currently disabled.

Use Sync Center if you want to sync your offline files now or check for sync conflicts.

4. Click OK.

You now can set up sync partnerships and resolve any sync conflicts that arise.

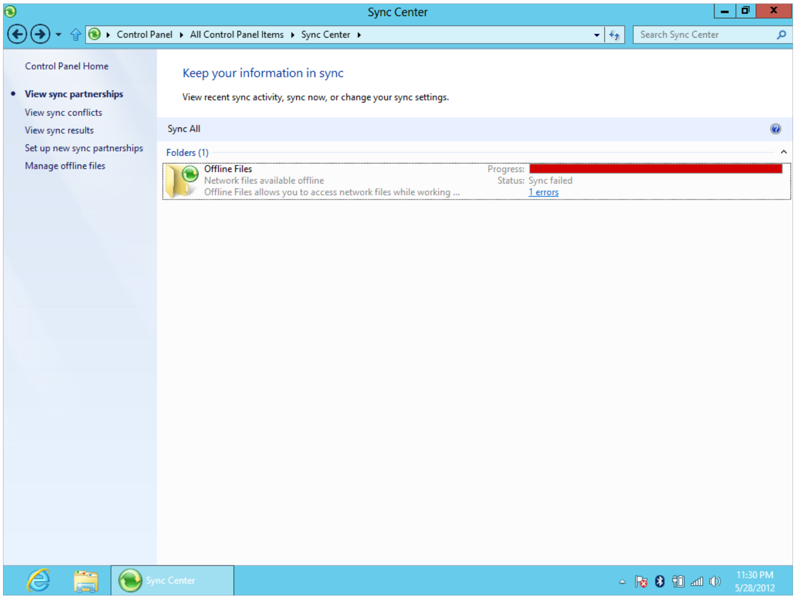
Using Sync Center

To configure offline files to run on a regular schedule, you'll need to configure Sync Center using the following steps:

1. Open the Charms Bar, click Search, and type **Sync**. Click Settings and then click the Sync Center item on the Settings screen. You also can launch Sync Center by opening the Control Panel, choosing Large Icons or Small Icons from the View By drop-down list, and clicking the Sync Center icon.
2. When Sync Center is open, click View Sync Partnerships on the left side of the window as shown in Figure 46.3.

FIGURE 46.3

Sync Center with the default appearance for offline files


Sync Center
Control Panel ▸ All Control Panel Items ▸ Sync Center ▸
Search Sync Center
Control Panel Home
View sync partnerships
View sync conflicts
View sync results
Set up new sync partnerships
Manage offline files
Keep your information in sync
Sync All
Folders (1)
Offline Files
Sync Center
11:30 PM
5/28/2012

View recent sync activity, sync now, or change your sync settings.

Network files available offline

Offline Files allows you to access network files while working ...

Progress:

Status: Sync failed

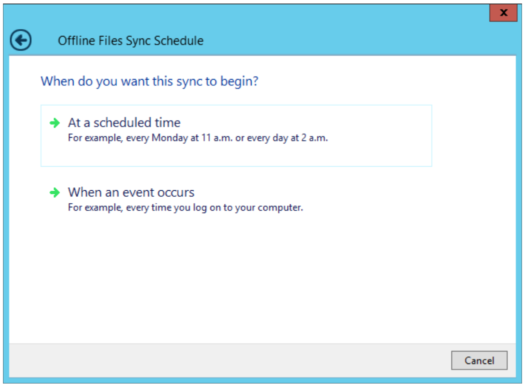
1 errors

3. Right-click Offline Files and choose Schedule For Offline Files, which starts the Offline Files Sync Schedule dialog box.
4. Select the network location that you want to synchronize and click the Next button.

5. You're now able to determine what starts the file synchronization. As shown in Figure 46.4, you can choose a recurring date and time or have the synchronization start as a result of an event that takes place on your computer.

FIGURE 46.4

Offline Files gives you the option for setting the schedule for synchronization



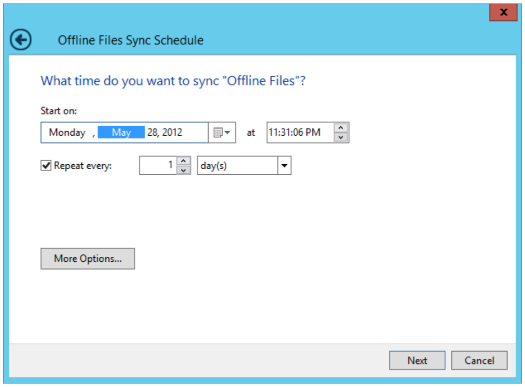
When do you want this sync to begin?

- At a scheduled time
  For example, every Monday at 11 a.m. or every day at 2 a.m.
- When an event occurs
  For example, every time you log on to your computer.

6. Based on the selection, you'll initially see two different screens. If you choose the first option, At A Scheduled Time, you'll see the screen shown in Figure 46.5, which allows you to set when the schedule should start and how often the synchronization should occur. The drop-down box allows you to select a range of units from minutes up to months. This means you could schedule the synchronization to happen every minute.

FIGURE 46.5

Set a schedule based on time for file synchronization



What time do you want to sync "Offline Files"?

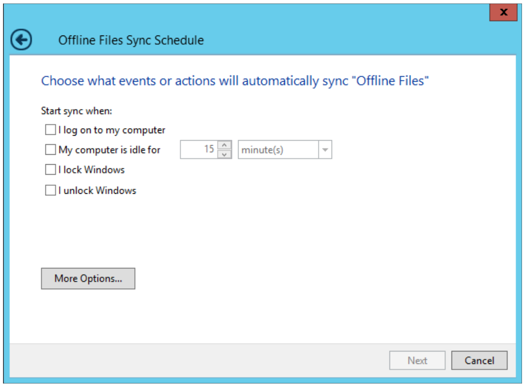
Start on: Monday , May 28, 2012 at 11:31:06 PM

☑ Repeat every: 1 day(s)

7. If you choose the second option — When An Event Occurs — you'll see the screen shown in Figure 46.6, which allows you to choose an action that will cause synchronization. You can trigger the synchronization based on when you log on, when you lock Windows, when you unlock Windows, or when the system is idle for a given amount of time.

FIGURE 46.6

Setting the options to trigger the synchronization based on an event



Offline Files Sync Schedule

Choose what events or actions will automatically sync "Offline Files"

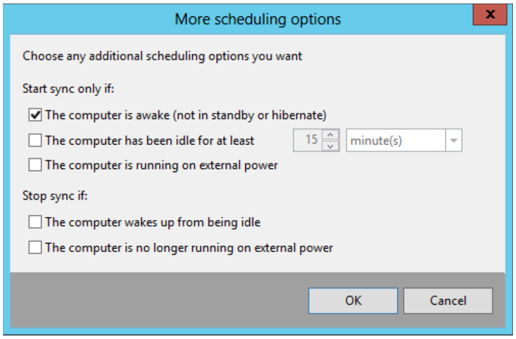
Start sync when:

☐ I log on to my computer
☐ My computer is idle for 15 minute(s)
☐ I lock Windows
☐ I unlock Windows

8. Regardless of what option you choose to trigger the file synchronization, there is a More Options button in both of the windows shown in Figures 46.5 and 46.6. Clicking this button provides you the opportunity to tell Windows when to start and stop synchronization. After you've made any changes to the More Scheduling Options dialog box shown in Figure 46.7, click the OK button.

FIGURE 46.7

Additional options for scheduling your synchronization



More scheduling options

Choose any additional scheduling options you want

Start sync only if:

☑ The computer is awake (not in standby or hibernate)
☐ The computer has been idle for at least 15 minute(s)
☐ The computer is running on external power

Stop sync if:

☐ The computer wakes up from being idle
☐ The computer is no longer running on external power

9. Next, you'll need to name your synchronization schedule. Enter a descriptive name in the Name text box and click the Save Schedule button.

When your schedule is configured, it will run either based on the time schedule you set or based on the events on the computer. You're able to view, edit, or delete your schedule by opening Sync Center, right-clicking the Offline Files entry, and choosing Schedule For Offline Folders as before in previous steps. This time, you're prompted with a dialog box that allows you to create a new schedule, view or edit an existing schedule, or delete an existing sync schedule. Clicking the View Or Edit An Existing Sync Schedule option runs you through the steps similar to the ones you used to create the original schedule.

You still have some additional settings to configure offline files, including disk usage and encryption settings, which are covered next.

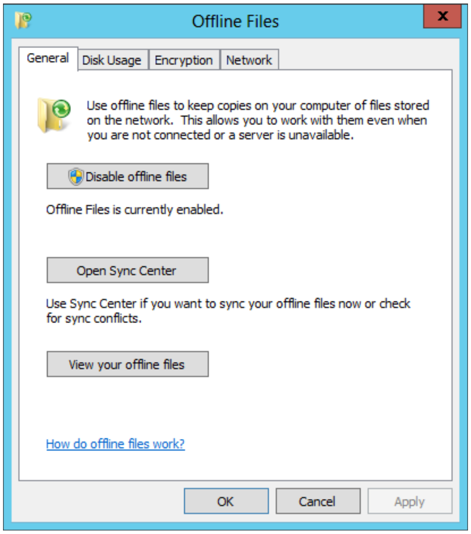
Settings for offline files

Beyond setting the network locations to synchronize and deciding when to synchronize the files and folders, Windows also allows you to set some additional options for offline files. To get to these settings, you'll need to use the Manage Offline Files features located in Sync Center. Open Sync Center and click the Manage Offline Files link on the left side of the Sync Center window. The Offline Files dialog box, shown in Figure 46.8, opens with the General tab selected.

- **Disable Offline Files:** This button disables all of the file synchronizations you have set up. If you currently have file synchronization disabled, the button will read-enable offline files. If you disable offline files, you'll need to restart your system for the changes to take effect.
- **Open Sync Center:** This button opens Sync Center.
- **View Your Offline Files:** Clicking this button brings up a window that shows all of your synchronizations. To see your offline files, open File Explorer, click Computer, click Network, and finally click the Network Location on which the sync files are stored. An example of the path used during this writing is shown in Figure 46.9, called SomeDocuments. Network folders that have been synced include a green wave circle in the bottom-left corner of the icons.

FIGURE 46.8

The General tab for the Offline Files dialog box



Use offline files to keep copies on your computer of files stored on the network. This allows you to work with them even when you are not connected or a server is unavailable.

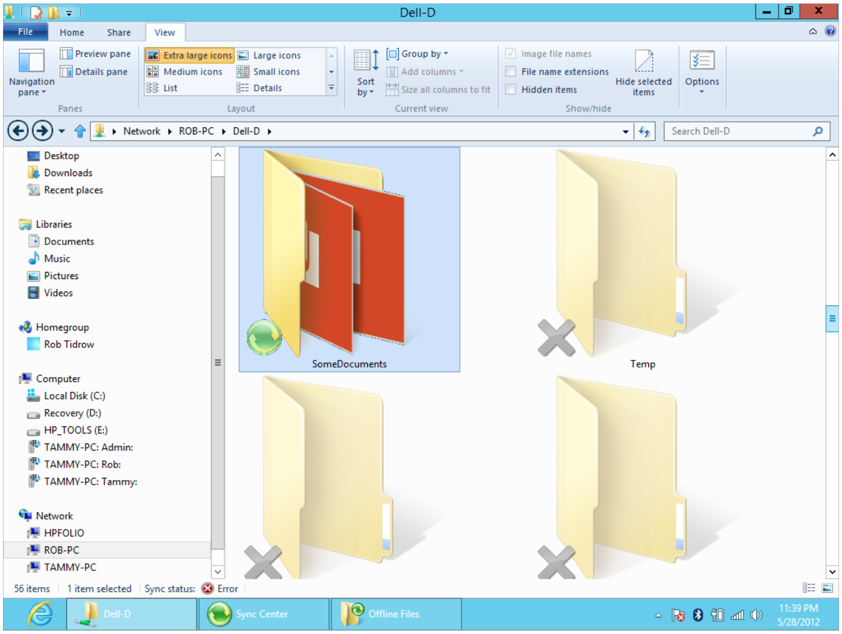
Offline Files is currently enabled.

Use Sync Center if you want to sync your offline files now or check for sync conflicts.

Offline Files
General
Disk Usage
Encryption
Network
Disable offline files
Open Sync Center
View your offline files
How do offline files work?
OK
Cancel
Apply

FIGURE 46.9

The SomeDocuments folder includes synchronized files

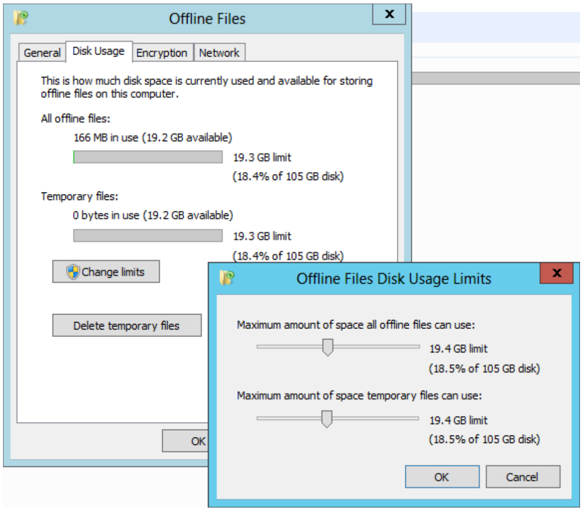


Dell-D
File
Home
Share
View
Navigation pane
Preview pane
Details pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Layout
Sort by
Group by
Add columns
Size all columns to fit
Current view
Image file names
File name extensions
Hidden items
Hide selected items
Show/hide
Options
Network ▸ ROB-PC ▸ Dell-D ▸
Search Dell-D
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
Network
HPFOLIO
ROB-PC
TAMMY-PC
SomeDocuments
Temp
56 items
1 item selected
Sync status: Error
Dell-D
Sync Center
Offline Files
11:39 PM
5/28/2012

To keep track of the amount of space your offline files are using and put limits on the amount of disk space used. To do this, you'll need to click the Disk Usage tab in the Offline Files dialog box. To make adjustments to the default values, click the Change Limits button, which brings up the dialog box shown in Figure 46.10.

FIGURE 46.10

The dialog box used to set limits on the amount of space used by offline files



This is how much disk space is currently used and available for storing offline files on this computer.

All offline files:
166 MB in use (19.2 GB available)
19.3 GB limit
(18.4% of 105 GB disk)

Temporary files:
0 bytes in use (19.2 GB available)
19.3 GB limit
(18.4% of 105 GB disk)

Maximum amount of space all offline files can use:
19.4 GB limit
(18.5% of 105 GB disk)

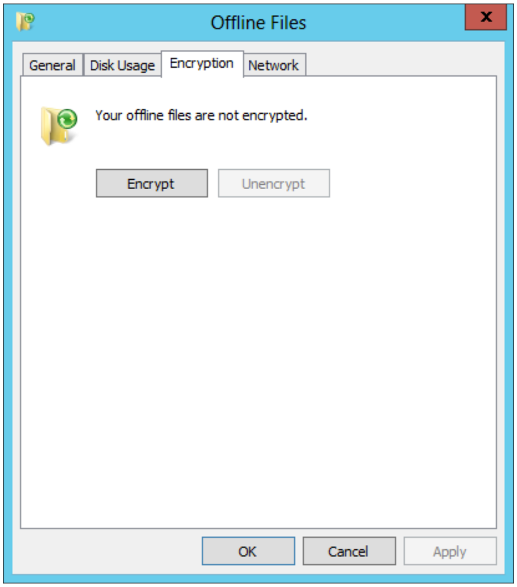
Maximum amount of space temporary files can use:
19.4 GB limit
(18.5% of 105 GB disk)

Make changes to the values using the slide bars; after you've set your limits, click OK to continue.

It is fairly common today that you hear of some institution that has had a laptop stolen with confidential information. Knowing this, Microsoft has included an option to encrypt any data with offline files synchronized with your local computer. Microsoft has also made it very easy to set up security. By clicking the Encryption tab (shown in Figure 46.11) within the Offline File dialog box, you're able to click the Encrypt button to encrypt the data that resides on your local system. When you do encrypt the data, only the data that resides on your local system is encrypted, not the data that resides on the server with which you are synchronizing. There is also no need for you to attempt to decrypt the files before using them. The decryption takes place when you attempt to use the synchronized file.

FIGURE 46.11

Encrypt files that are deemed highly critical or confidential

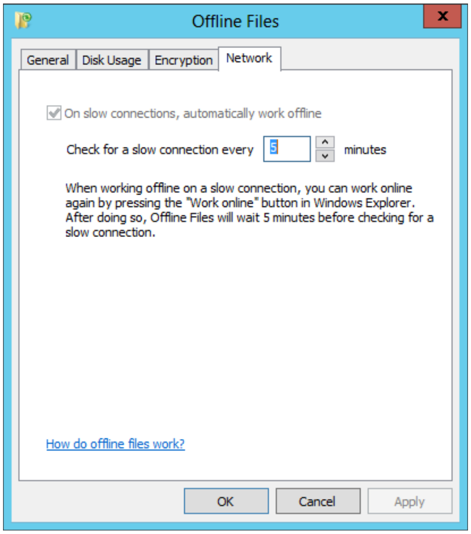


Your offline files are not encrypted.

The final tab within the Offline Files dialog box is for working with a slow network connection. Clicking the Network tab allows you to determine how your system works after it determines you have a slow network connection. If you open up the network location that is currently being synchronized with your local system and double-click a file, Windows will use a cached version if it determines the network connection is too slow. With the settings on the Network tab (as shown in Figure 46.12), you're able to determine whether you would rather wait for the real version of the file. If the On Slow Connections, Automatically Work Offline option is selected, Windows uses the local version of the file. Additionally, Windows checks, every five minutes by default, to see whether you still have a slow connection. You're able to change this setting by setting the Check For A Slow Connection Every option.

FIGURE 46.12

Use the Network tab for slow network connections



☑ On slow connections, automatically work offline

Check for a slow connection every 5 minutes

When working offline on a slow connection, you can work online again by pressing the "Work online" button in Windows Explorer. After doing so, Offline Files will wait 5 minutes before checking for a slow connection.

With all of the settings for Offline Folders and Sync Center, you're well on your way to using offline files. If you've set up the schedule, you'll have the latest versions of the files on your system based on your schedule. You've also determined how much disk space to dedicate to offline files and set up encryption if the data you are storing is sensitive. On occasion, you may hit a conflict in your synchronizations. This happens when the file on the remote computer changes and you also make changes to the file using your local offline version.

Dealing with conflict

Sync Center really comes in handy when you have a conflict with synchronization. The most common scenario is outlined in the following steps:

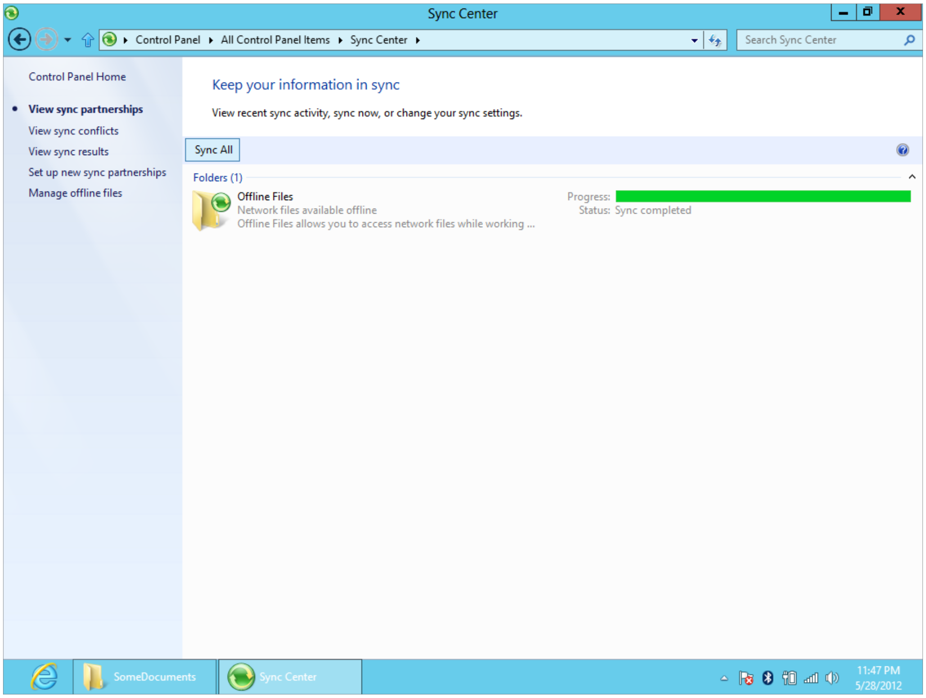
1. You have set up synchronization using offline files to a folder named Important Documents located on a remote server.
2. You disconnect from the network and edit some of the files within the folder.
3. While you are away and disconnected from the network, a coworker makes copies to the same files on the server.
4. When you connect back to the network, Sync Center resumes the schedule you defined and realizes that there's a conflict and asks you to resolve the issue.

The likelihood of this scenario goes up with the number of users you have sharing the same data. You won't run into this scenario very often with files that don't change frequently. To understand how to manage this scenario, follow these steps but first make sure that you have a network location set up and offline files working as outlined earlier in the chapter:

1. Verify that your synchronization schedule is working by opening Sync Center within the Control Panel. Make sure that you verify that the status of your synchronization is fairly recent by clicking View Sync Partnerships as shown in Figure 46.13.

FIGURE 46.13

The status of the synchronization is fairly recent


Sync Center
Control Panel
All Control Panel Items
Sync Center
Search Sync Center
Control Panel Home
View sync partnerships
View sync conflicts
View sync results
Set up new sync partnerships
Manage offline files
Sync All
Folders (1)
Offline Files
Progress:
SomeDocuments
Sync Center
11:47 PM
5/28/2012

Keep your information in sync

View recent sync activity, sync now, or change your sync settings.

Network files available offline

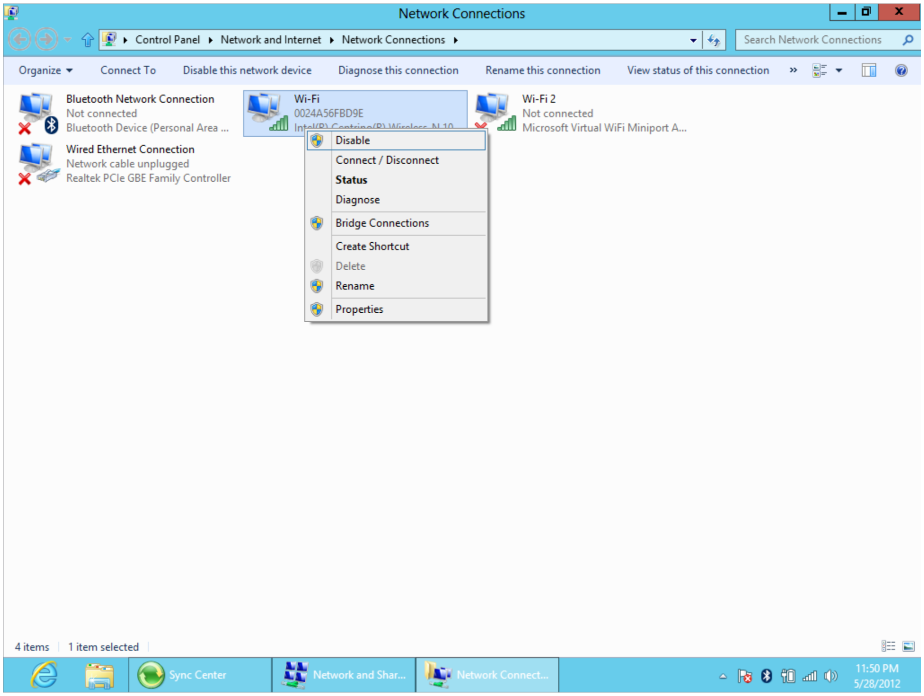
Offline Files allows you to access network files while working ...

Status: Sync completed

2. Disconnect from the network either by disconnecting your network cable or using the Disable This Network Device button shown in Figure 46.14. You can get to this window by selecting Networking And Sharing Center in the Control Panel. Click Change Adapter Settings on the left side of the Control Panel. Click Disable This Network Device, or right-click the network adapter and choose Disable.

FIGURE 46.14

Disconnect from your network connection


Network Connections
Control Panel ▸ Network and Internet ▸ Network Connections ▸
Search Network Connections
Organize ▾
Connect To
Disable this network device
Diagnose this connection
Rename this connection
View status of this connection
»
Bluetooth Network Connection
Not connected
Bluetooth Device (Personal Area ...
Wi-Fi
0024A56FBD9E
Intel(R) Centrino(R) Wireless-N 10...
Wi-Fi 2
Not connected
Microsoft Virtual WiFi Miniport A...
Wired Ethernet Connection
Network cable unplugged
Realtek PCIe GBE Family Controller
Disable
Connect / Disconnect
Status
Diagnose
Bridge Connections
Create Shortcut
Delete
Rename
Properties
4 items
1 item selected
Sync Center
Network and Shar...
Network Connect...
11:50 PM
5/28/2012

3. With your network connection disabled, navigate to the Offline Files. To do this, open your Computer folder; the files will be located under the Network group. Select a file you can edit. This can be any type of file, including a text document, an image, or any other file you can afford to make changes to. When you are done making changes, save the file. The contents of the file are stored locally on your system, and your system attempts to synchronize the next time you connect to the network.
4. From another system on the network, connect to the original location of the file (this is the location of the file with which you were originally syncing). Open the file and make some changes to the same file that you made changes to in the previous step. Save your changes to the network location.
5. Go back to the computer that was recently disconnected from the network and reconnect. To reconnect to the network, open the Network And Sharing Center again and click Change Adapter Settings. Select your original network connection and click the Enable This Network Device button.

6. When connected to the network, open Sync Center if you've closed it. The status changes from Disconnected as Sync Center tries to re-sync your files. This time, however, the system notifies you that there was a conflict with the synchronization.
7. Clicking the Conflict link lists all of the files that had a synchronization conflict. The Details column indicates that "A file was changed on this computer and the server while this computer was offline." Right-clicking the entry provides three options:
   - **View Options To Resolve Conflict:** This option enables you to keep the local version on your system and overwrite the changes on the server. You have the option to use the version on the server and overwrite your local copy. Finally, you have the option to keep both of them.
   - **Ignore:** Selecting Ignore removes the conflict from the list. Both of the files remain in their original states — the one on your local system and the one on the remote system. However, the next time synchronization occurs, the same synchronization conflict will occur.
   - **Properties:** The Properties dialog box shows the details of the type of partnership, the date, and the synchronization conflict.

Microsoft has provided quite a few options for dealing with the synchronization conflicts that arise with offline folders. In addition to the conflicts showing up in Sync Center, there is also a notification from the Notification area on the taskbar, which will notify you when a conflict has occurred. In the previous examples, the Offline Files entry within Sync Center is referred to as a sync partnership.

Synchronizing with Other Devices

Synchronizing with devices other than files and folders within a network location provides you with the ability to keep devices other than just your computer synchronized. One of the biggest differences is that most devices that provide synchronization capability do so using the software that comes with the device. The software will usually set up a partnership within Sync Center, but the majority of the configuration and maintenance is done within the software applications that come with the device. Because each device that provides syncing options is different, here are some general guidelines for working with different devices:

- The first step is to follow the instructions provided by the manufacturer. They will provide details specific to the product and the steps necessary for installing the software and configuring the device.
- It is necessary to connect the device in some way to the computer. This may include connecting the device via USB, or you may be required to connect the device via a Bluetooth connection.

- Not all devices are designed to work with Sync Center. If you open Sync Center and your device does not show up as an available partner after clicking Set Up New Sync Partnerships, your device manufacturer may address synchronization in its own software.

The most important guideline is to follow the documentation provided by the manufacturer of the device. Also, if the device appears to have problems communicating with your computer, you should update to the latest available drivers found online at the product's website.

Wrap-Up

This chapter has gone into the details of Sync Center and also how to synchronize offline folders. Specifically, it covered:

- Setting up synchronization for a network location.
- Using Sync Center to view partnerships. Specifically, using Sync Center to view the offline files partnership.
- Setting schedules and different events for starting synchronizations.
- Configuring the details regarding offline files for disk usage, and encryption, and what to do when synchronizing over a slow network connection.
- Dealing with conflicts that occur when synchronization determines a file has changed in two locations while your system has been disconnected from the network. The chapter also covered the options available for resolving the synchronization failure.
- Connecting and synchronizing other types of devices to keep content on the devices in sync with your computer.

CHAPTER 47

Performance Tuning Your System

IN THIS CHAPTER

- Getting information about your system
- Using tools to drill down on performance
- Maximizing CPU and memory resources
- Using ReadyBoost to boost performance
- Maintaining your hard drive's performance
- Defragmenting files for better performance

Compared to most machines, a computer requires virtually no maintenance. That's because it has fewer moving parts compared to other machines. However, you can do some things to keep your computer running at its optimum.

For example, the more the hard drive is used to store data, the more fragmented the data on the drive becomes. That doesn't pose any problems for reading the data, but it does slow down the process. To speed it up again, you can defragment the drive. This topic, and others that will help you optimize your computer's performance, are covered in this chapter.

Getting to Know Your System

A computer system is made up of many different components. The two main components that make up the actual "computer" are the CPU and RAM. The overall speed of your system is largely determined by the speed of your CPU and the amount of RAM in your system. The speed of a CPU is measured in gigahertz (GHz), billions of instructions per second, or for older (and slower) systems in megahertz (MHz), millions of instructions per second.

The amount of RAM determines how much data the CPU can work with at any one time without accessing the much slower hard drive. RAM chips do come in various speeds. But the amount of RAM you have, more so than its speed, really determines the overall speed of your system. RAM is measured in megabytes (MB) or gigabytes (GB). A megabyte is roughly a million bytes.

(A byte is the amount of memory required to store approximately a single character, such as the letter A.). A gigabyte (GB) is 1,024 megabytes. In short, the faster your CPU and the more RAM the computer has, the better its performance.

Knowing your CPU and RAM

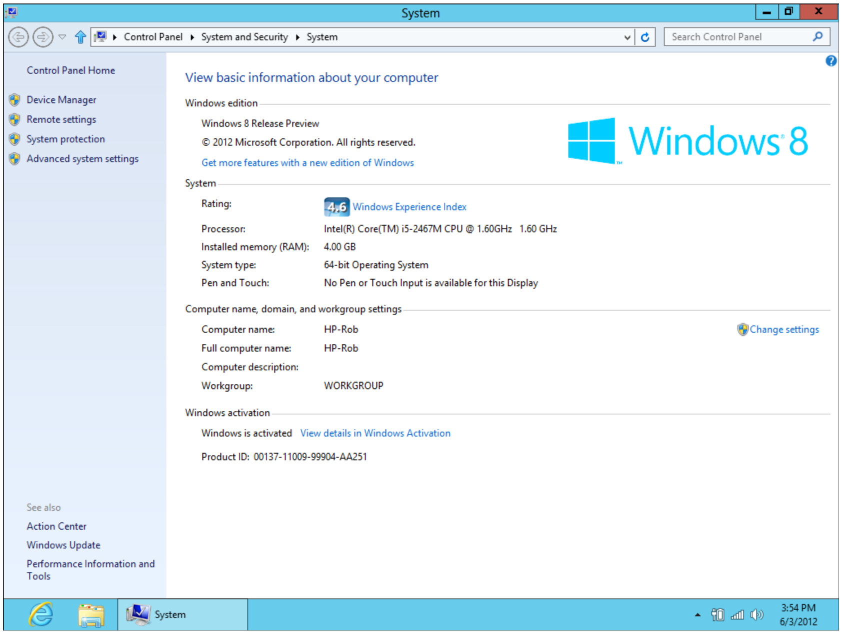
To see the brand name and speed of your processor and the amount of RAM you have, right-click your Computer icon from File Explorer and choose Properties. Or, show the Charms Bar, type **sys**, click Settings, and click System in the Settings list. The System Control Panel applet that opens shows the basic computer information as well as information about the version of Windows you're using, as you can see in Figure 47.1.

Note

The Windows Experience Index provides a quick snapshot of the major components that determine how you experience Windows 8 on your computer.

FIGURE 47.1

The System applet


System
Control Panel ▸ System and Security ▸ System
Search Control Panel
Control Panel Home
Device Manager
Remote settings
System protection
Advanced system settings
See also
Action Center
Windows Update
Performance Information and Tools
Windows 8
Change settings
System
3:54 PM
6/3/2012

View basic information about your computer

Windows edition

Windows 8 Release Preview

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Get more features with a new edition of Windows

System

Rating:	4.6 Windows Experience Index
Processor:	Intel(R) Core(TM) i5-2467M CPU @ 1.60GHz 1.60 GHz
Installed memory (RAM):	4.00 GB
System type:	64-bit Operating System
Pen and Touch:	No Pen or Touch Input is available for this Display

Computer name, domain, and workgroup settings

Computer name:	HP-Rob
Full computer name:	HP-Rob
Computer description:	
Workgroup:	WORKGROUP

Windows activation

Windows is activated View details in Windows Activation

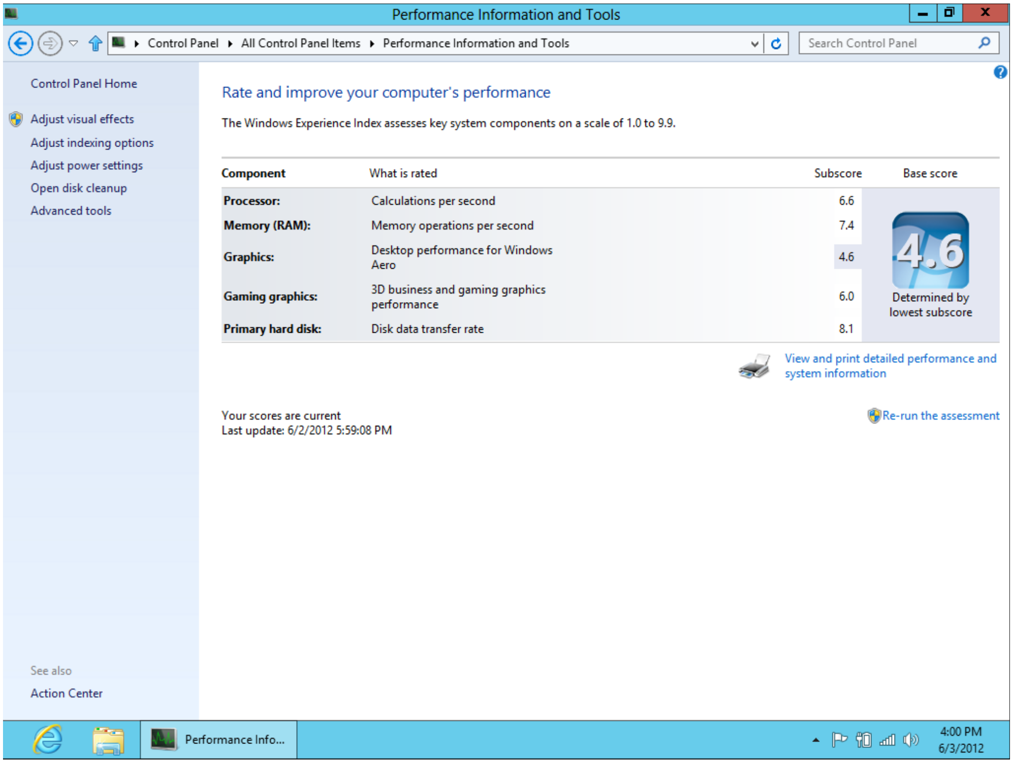
Product ID: 00137-11009-99904-AA251

Windows Experience Index

The first thing most people will notice is the Windows Experience Index. It is not a measure of your computer's overall speed or ability. Rather, it's an indicator of the weakest component in the system, the one that's most likely to give you a less than optimal experience. So don't interpret the value as being a general measure of your computer's overall performance. For a better understanding of what the number means, click the Windows Experience Index link next to the number to open Performance Information And Tools, shown in Figure 47.2.

FIGURE 47.2

The Performance Information And Tools applet



Performance Information and Tools

Control Panel ▸ All Control Panel Items ▸ Performance Information and Tools

Search Control Panel

Control Panel Home

Adjust visual effects

Adjust indexing options

Adjust power settings

Open disk cleanup

Advanced tools

Rate and improve your computer's performance

The Windows Experience Index assesses key system components on a scale of 1.0 to 9.9.

Component	What is rated	Subscore	Base score
Processor:	Calculations per second	6.6	4.6 Determined by lowest subscore
Memory (RAM):	Memory operations per second	7.4	
Graphics:	Desktop performance for Windows Aero	4.6	
Gaming graphics:	3D business and gaming graphics performance	6.0	
Primary hard disk:	Disk data transfer rate	8.1	

View and print detailed performance and system information

Your scores are current
Last update: 6/2/2012 5:59:08 PM

Re-run the assessment

See also

Action Center

Performance Info...

4:00 PM
6/3/2012

The second page shows that the 4.6 rating on that computer comes from the Graphics category. Notice that the index isn't an average. It's strictly the lowest score. Even with a relatively low score, your Windows 8 computer could perform quite well. For example, if you don't use any 3D business applications or 3D games, a low score for that item would likely not affect your experience with Windows. The items that have the most impact on overall computer speed are the processor, memory, and primary hard drive. If those scores are high, performance in general will be good.

NOTE
None of the numbers in the index relate to Internet speed. The primary factor that determines how long it takes you to download files or other data from the Internet is the bandwidth (speed) of your Internet connection. The faster your Internet connection, the less time it takes to download data. However, the other performance indicators can impact your Internet experience. Browsing on a slow computer will not be as fast as on a fast computer.

The Performance Information And Tools page shown in Figure 47.2 provides links to more information about the meanings of the numbers, ways to improve your computer's performance. The Re-Run The Assessment link performs all the tests needed to calculate those numbers. If you changed some hardware in your system, but still got the same performance rating, you could use that link to re-run the tests against your new hardware.

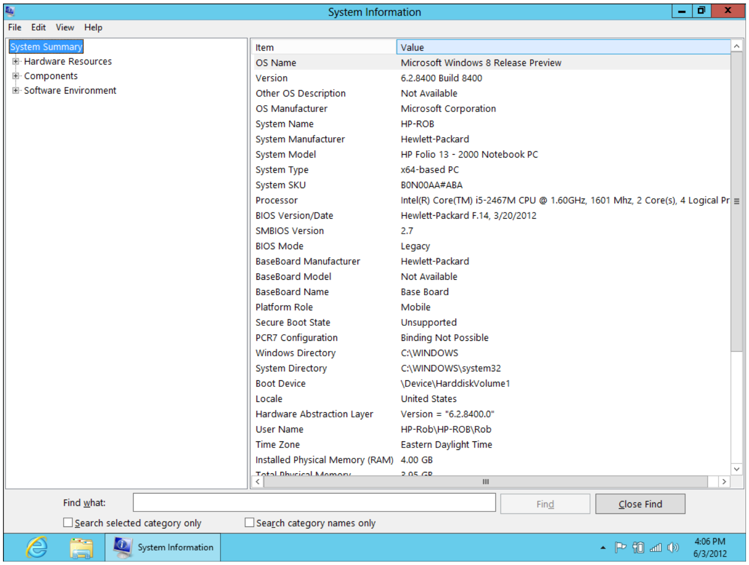
The View And Print Detailed Performance And System Information link shows all the information from the page, and additional details, and includes a button to print the page. The other blue links provide general information.

Getting more detailed information about your PC

You can get more detailed information about all the components that make up your computer system from the System Information program. To open System Information, display the desktop and press Windows+X. Click Run, type **msinfo32**, and press Enter. The System Information window shown in Figure 47.3 opens.

FIGURE 47.3

The System Information program window



Item	Value
OS Name	Microsoft Windows 8 Release Preview
Version	6.2.8400 Build 8400
Other OS Description	Not Available
OS Manufacturer	Microsoft Corporation
System Name	HP-ROB
System Manufacturer	Hewlett-Packard
System Model	HP Folio 13 - 2000 Notebook PC
System Type	x64-based PC
System SKU	B0N00AA#ABA
Processor	Intel(R) Core(TM) i5-2467M CPU @ 1.60GHz, 1601 Mhz, 2 Core(s), 4 Logical Pr
BIOS Version/Date	Hewlett-Packard F.14, 3/20/2012
SMBIOS Version	2.7
BIOS Mode	Legacy
BaseBoard Manufacturer	Hewlett-Packard
BaseBoard Model	Not Available
BaseBoard Name	Base Board
Platform Role	Mobile
Secure Boot State	Unsupported
PCR7 Configuration	Binding Not Possible
Windows Directory	C:\WINDOWS
System Directory	C:\WINDOWS\system32
Boot Device	\Device\HarddiskVolume1
Locale	United States
Hardware Abstraction Layer	Version = "6.2.8400.0"
User Name	HP-Rob\HP-ROB\Rob
Time Zone	Eastern Daylight Time
Installed Physical Memory (RAM)	4.00 GB
Total Physical Memory	3.95 GB

The left column of the System Information window organizes your system information into expandable and collapsible categories. For example, clicking the + sign next to the Components category expands that category to display subcategories and the names of specific device types. When you click a specific type, such as Drives under the Storage category, the pane on the right shows information about the components installed in your computer system.

You don't actually do any work in the System Information program. Its job is to just present the facts about your particular computer's installed hardware and software. However, you can export a copy of the System Information data to a text file, which in turn you can open, format, or print using any word processing program or text editor. To export a copy of your system information to a file, just choose File ➪ Export from System Information's menu bar.

You can also print your system information, either in whole or in part. To print all of your system information, first click System Summary at the top of the left column. To print just a category, first click a category name, such as Components. Then, choose File ➪ Print from System Information's menu bar. In the Print dialog box that opens, choose All if you want to print everything, choose Selection to print just the text you may have selected, or choose Current Page to print the page you are viewing. To close System Information, click its Close (X) button or choose File ➪ Exit.

Maximizing CPU and Memory Resources

Your operating system (Windows 8) takes care of managing the CPU and memory for you. Even so, you can do some things to improve performance as it relates to your system's memory and CPU. The following sections offer some tips.

Conserving memory

One of the best things you can do to improve your computer's performance is to ensure that it has plenty of memory. Initially, that means making sure the computer has a sufficient amount of physical memory installed. You should consider 2GB a minimum, although Windows can run with 1GB. If you use lots of programs at once, or use applications that require a lot of memory, consider using the 64-bit version of Windows and having at least 4GB of RAM in the computer, if not more.

Having a lot of memory is part of the solution, but managing the memory you do have is equally important. You can optimize your computer's RAM in these ways:

- **Reduce the number of programs you run concurrently:** If you aren't using a program, close it to reclaim the memory it is using. You can always open it again later if you need it.

- **Minimize the number of programs you install on your computer:** Do you really need a program on the tray that tells you what the weather is like outside? All of the little add-on programs you install and run on your computer, even if they are running in the background, consume resources. The fewer, the better.

Reducing the number of programs running at one time not only improves performance from a memory perspective, but it also reduces the load on the CPU, making processing cycles available to those programs that do need to be running.

Managing virtual memory

In the very early days of DOS, a computer could run only one program at a time. Programs had to be written to fit in the available (and minimal) memory in the computer. In today's Windows OS, you can run almost as many programs as you want at one time as a result of the design of today's CPUs and of the OS itself. The capability to manage memory effectively for all of those programs is due, in part, to the use of *virtual memory*.

Modern computers can use two types of memory. The first type is *physical memory* (RAM), which consists of physical memory chips on memory modules (small circuit boards) that plug into the computer's motherboard.

TIP

The amount of RAM shown on the General tab of the System Properties dialog box (refer to Figure 47.1) is the amount of physical RAM in your system.

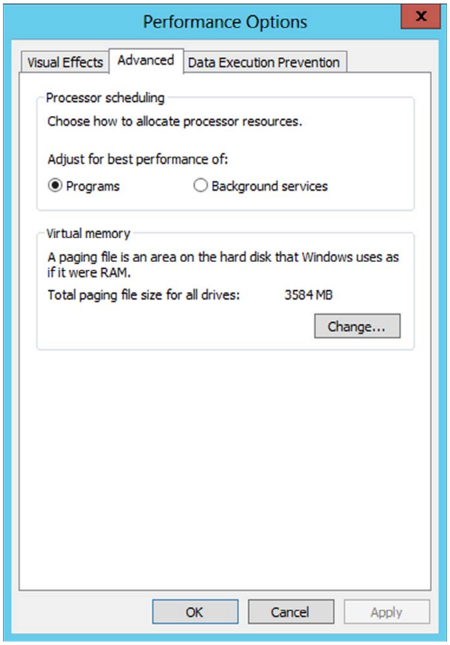
The second type of memory is *virtual memory*, and Windows 8 uses the computer's hard drive for that, using a file on the drive as a place to store data as an alternative to physical memory. The area on the hard drive that's used as virtual memory is called a *paging file* because data is swapped back and forth between physical and virtual memory in small chunks called *pages*. When you fill up both your physical memory and virtual memory, the computer doesn't just stop and display an error. Rather, it displays a message in advance, warning that the computer is running low on virtual memory and suggesting that you make room for more.

Because the virtual memory is just a paging file on the hard drive, you can easily add more just by increasing the size of the paging file. You don't have to buy or install anything. This is unlike physical memory in that the only way to increase physical memory is to buy and install more RAM. On downside to virtual memory is that it is much slower than physical memory as hard drives are slower than RAM chips.

To manage virtual memory in Windows 8, open the System applet from the Control Panel and click the Change Settings link. In the resulting System Properties dialog box, click the Advanced System Settings item on the left side of the window, and click the Settings button in the Performance group. Then, click the Advanced tab in the resulting Performance Options dialog box (see Figure 47.4). The Virtual Memory area on this dialog box shows the total paging file size for all drives. To adjust the settings, click the Change button to open the Virtual Memory dialog box shown in Figure 47.5.

FIGURE 47.4

The Advanced tab of the Performance Options dialog box


Performance Options
Visual Effects
Advanced
Data Execution Prevention
Change...
OK
Cancel
Apply

Processor scheduling

Choose how to allocate processor resources.

Adjust for best performance of:

● Programs ○ Background services

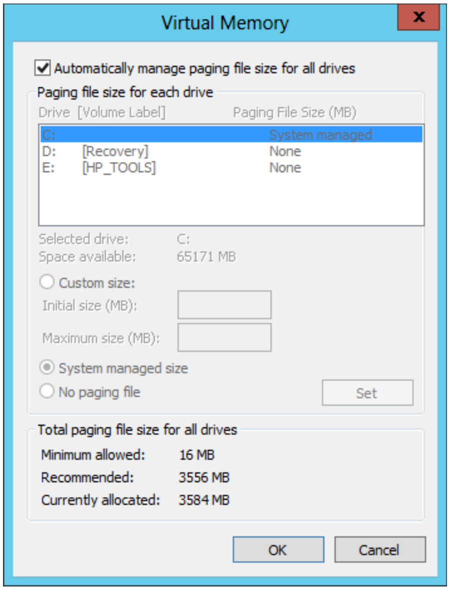
Virtual memory

A paging file is an area on the hard disk that Windows uses as if it were RAM.

Total paging file size for all drives: 3584 MB

FIGURE 47.5

The Virtual Memory dialog box


Virtual Memory
Set
OK
Cancel

☑ Automatically manage paging file size for all drives

Paging file size for each drive

Drive [Volume Label]		Paging File Size (MB)
C:		System managed
D:	[Recovery]	None
E:	[HP_TOOLS]	None

Selected drive: C:
Space available: 65171 MB

○ Custom size:
Initial size (MB):
Maximum size (MB):
● System managed size
○ No paging file

Total paging file size for all drives

Minimum allowed: 16 MB
Recommended: 3556 MB
Currently allocated: 3584 MB

In most cases, it makes sense to select the top check box, Automatically Manage Paging File Size For All Drives, to allow Windows to adjust the page file.

If you don't want Windows to manage the page file for you, your main options in the Paging File Size For Each Drive area of the Virtual Memory dialog box are as follows:

- **Custom Size:** You choose where you want to put your paging file(s), their initial size, and maximum size.
- **System Managed Size:** Tells Windows to create and size the paging file automatically for you.
- **No Paging File:** Eliminates the paging file from a drive. Not recommended unless you're moving the paging file from one drive to another.

If you have multiple hard drives, you can get the best performance by using the least busy drive for virtual memory. For example, if you have a D: drive on which you store documents, it may be better to use that, rather than the C: drive, because the C: drive is pretty busy with Windows and your installed programs.

If you have multiple *physical drives*, you can get a little performance boost by splitting the paging file across the two drives. A single drive that's partitioned into two or more partitions, to look like multiple drives, doesn't count. You don't want to divide the paging file across multiple partitions on a single drive because that will have the reverse effect and slow things down.

If you do opt for a custom size, you can work with any one hard drive at a time. The drives are listed by letter and labeled at the top of the dialog box. In the example shown, all of the partitions actually reside on a single drive.

TIP

The Disk Management tool discussed in Chapter 44, "Installing and Removing Hardware," lists hard drives by number. If you have a single physical hard drive, it will be Disk 0. If you have two physical hard drives, they'll be listed as Drive 0, Drive 1, and so forth.

If you don't select the check box at the top of the Virtual Memory dialog box, you'll need to set the paging file sizes individually. For example, to move the paging from drive C: to D:, first click drive C: at the top of the dialog box, choose No Paging File, and then click the Set button. Then, click drive D:, choose Custom Size, set your sizes, and click Set.

The Total Paging File Size For All Drives section at the bottom of the dialog box shows the minimum allowable size, a recommended size, and the currently allocated size (the last measurement being the sum of all the Initial Size settings). The recommended size is usually about 1.5 times the amount of physical memory. The idea is to prevent you from loading up way more stuff than you have physical RAM to handle, which would definitely make your computer run more slowly.

If your computer keeps showing messages about running out of virtual memory, you'll definitely want to increase the initial and maximum size of the paging file. A gigabyte (1,024MB) is a nice round number. But if the computer runs slowly after you increase the amount of virtual memory, the best solution would be to add more physical RAM.

If you do change the Virtual Memory settings and click OK, you'll be asked if you want to restart your computer. If you have programs or documents open, you can choose No and close everything first. But because the paging file is only created when you first start your computer, you'll eventually need to restart the computer to take advantage of your new settings.

Priorities, foreground, and background

Your computer's CPU and RAM are very busy places, with potentially thousands of tasks occurring at one time. To try to optimize performance, Windows prioritizes those tasks. Your application programs typically run in the *foreground*, which means that when you click an item with your mouse or do something at the keyboard, fulfilling that request gets top priority in terms of being sent to the CPU for execution.

Most processes, by comparison, run in the *background*. This means that they get a lower priority and have to momentarily step aside when you tell Windows or an application to do something. For example, printing a document is treated as a low-priority background process, and for a good reason. All printers are basically slow, mechanical devices anyway. So by making printing a low-priority process, you can continue to use your computer at near normal speeds while the printer is slowly churning out its printed pages.

Controlling CPU priorities

By default, programs that you're using are given a higher priority than background processes. It's possible to reverse that by giving processes a higher priority than applications. If you have an intensive background task running and want to give it higher priority, you can reverse the order. Or, if you want to make sure that your applications are getting top priority, as they should be, follow these steps:

1. Open the System window for your system.

TIP

The System icon in Control Panel also opens the System window. If Control Panel opens in Category view, click System And Security and click the System link.

2. Click the Advanced System Settings link on the left side of the screen to bring up the System Properties dialog box. Click the Advanced tab in the System Properties dialog box.

3. Under the Performance heading, click the Settings button. The Performance Options dialog box opens.
4. In the Performance Options dialog box, click the Advanced tab shown previously in Figure 47.4.

The Processor Scheduling options determine whether your actions, or processes, get top priority when vying for CPU resources to do their jobs. If you choose Background Services, your computer may not be as responsive as you'd like, but background tasks will get higher priority. So for example, if you are running a scan of your system in the background and want it to finish faster, select Background Services in the Performance Options dialog box and click OK.

NOTE

Choosing Background Services won't make your printer print any faster. There's really nothing you can do to speed printing, other than use the printer's Draft mode (if it has one). But even so, printers are just inherently slow mechanical devices.

Monitoring and Adjusting Performance

Windows 8 includes a great selection of tools to help you monitor and tune your system's performance. You've already seen a couple of them, notably the Performance Information And Tools applet described earlier in this chapter. The following sections explore this tool in more detail, along with several others that will help you keep your system running at its best.

Performance Monitor

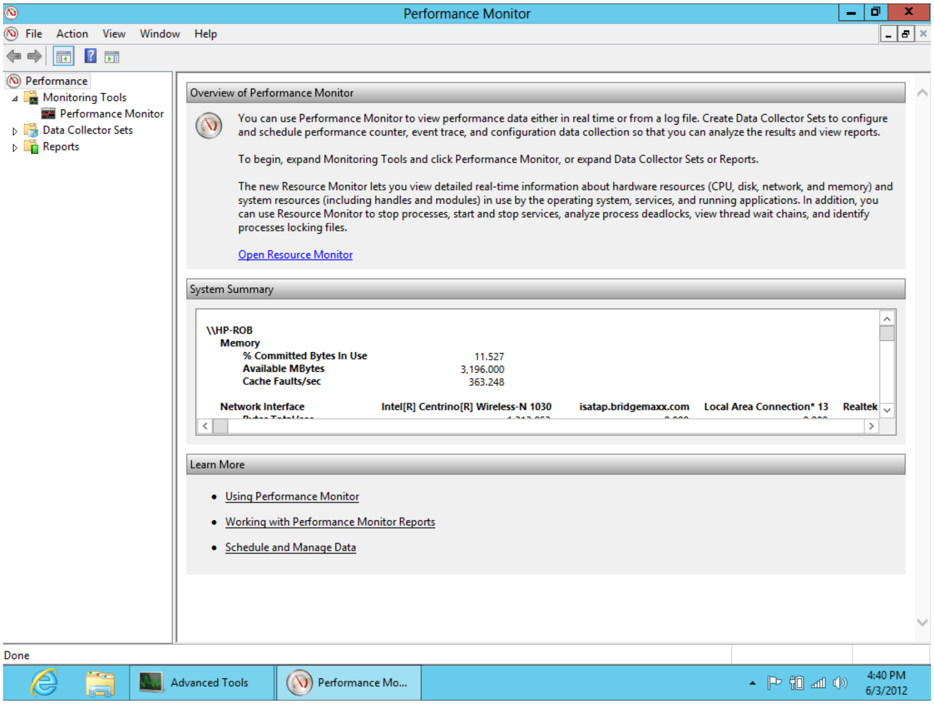
Performance Monitor, included in Windows 8, has also been available in previous versions of Windows. It provides an interface for viewing performance counters on your system. To run Performance Monitor, first open the Action Center (click the Action Center button on the tray and click Open Action Center). Then, in the left pane of the Action Center, click View Performance Information. Finally, in Performance Information And Tools, click Advanced Tools in the left pane and click the Open Performance Monitor link. Figure 47.6 shows the Performance Monitor.

TIP

To save several steps when opening Performance Monitor, use Search and enter **perfmon**.

FIGURE 47.6

Performance Monitor



Overview of Performance Monitor

You can use Performance Monitor to view performance data either in real time or from a log file. Create Data Collector Sets to configure and schedule performance counter, event trace, and configuration data collection so that you can analyze the results and view reports.

To begin, expand Monitoring Tools and click Performance Monitor, or expand Data Collector Sets or Reports.

The new Resource Monitor lets you view detailed real-time information about hardware resources (CPU, disk, network, and memory) and system resources (including handles and modules) in use by the operating system, services, and running applications. In addition, you can use Resource Monitor to stop processes, start and stop services, analyze process deadlocks, view thread wait chains, and identify processes locking files.

Open Resource Monitor

System Summary

```
\\HP-ROB
    Memory
        % Committed Bytes In Use          11.527
        Available MBytes               3,196.000
        Cache Faults/sec                 363.248

    Network Interface        Intel[R] Centrino[R] Wireless-N 1030    isatap.bridgemaxx.com    Local Area Connection* 13    Realtek
```

Learn More

- Using Performance Monitor
- Working with Performance Monitor Reports
- Schedule and Manage Data

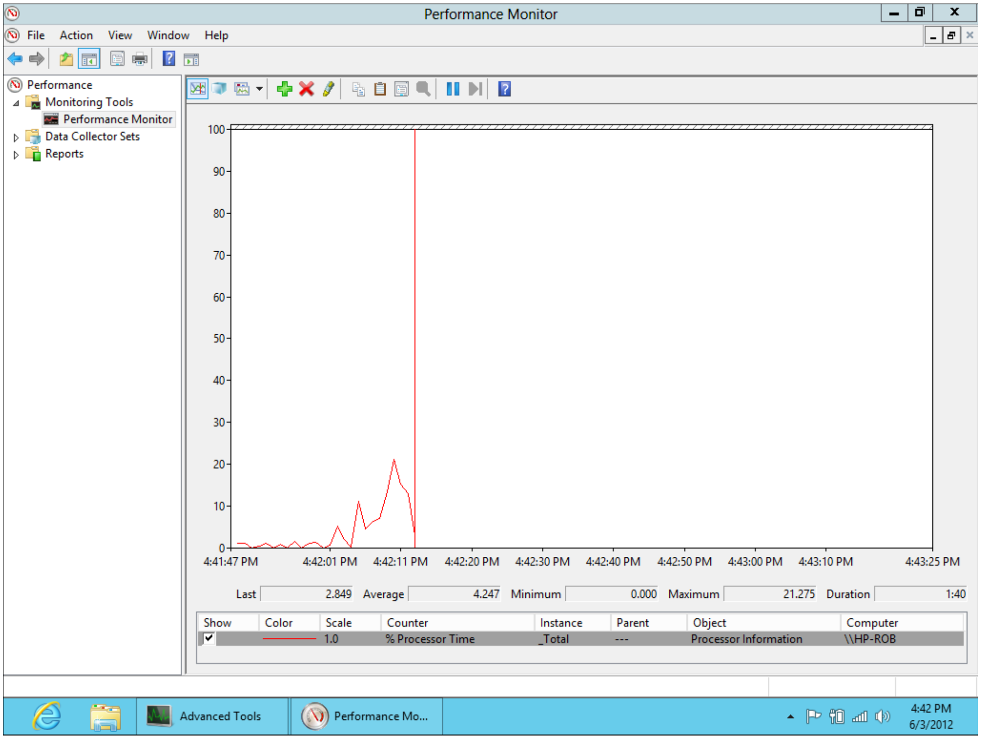
NOTE

Performance Monitor is a very complex application and we could easily devote several chapters to it. For this reason, we're covering only some of the basic functions of the application. To get more information, search for Performance Monitor under Windows Help.

When Performance Monitor opens, the Performance branch in the left pane is selected and the Performance Monitor window displays general information about the program, a system summary, and some links to learn more using Performance Monitor. Although the System Summary area shows current performance data, you'll probably prefer to see a visual representation. To do so, click Performance Monitor under the Monitoring Tools branch in the left pane. Figure 47.7 shows an example.

FIGURE 47.7

Performance graphs in Performance Monitor


Performance Monitor
File
Action
View
Window
Help
Performance
Monitoring Tools
Performance Monitor
Data Collector Sets
Reports
100
90
80
70
60
50
40
30
20
10
0
4:41:47 PM
4:42:01 PM
4:42:11 PM
4:42:20 PM
4:42:30 PM
4:42:40 PM
4:42:50 PM
4:43:00 PM
4:43:10 PM
4:43:25 PM
Advanced Tools
Performance Mo...
4:42 PM
6/3/2012

Last 2.849 Average 4.247 Minimum 0.000 Maximum 21.275 Duration 1:40

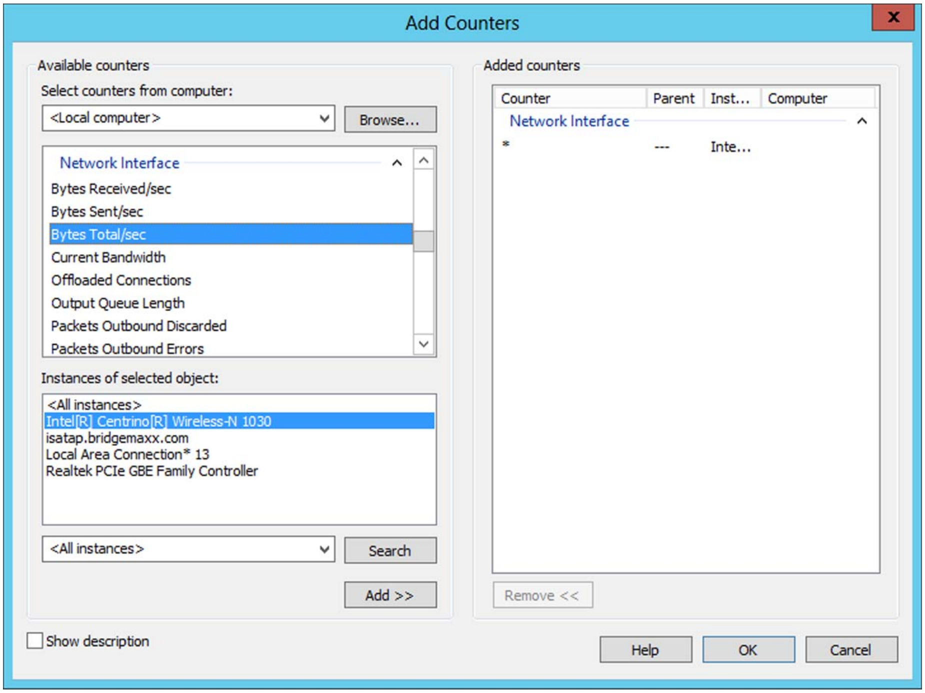
Show	Color	Scale	Counter	Instance	Parent	Object	Computer
☑	—	1.0	% Processor Time	_Total	---	Processor Information	\\HP-ROB

The line crossing the screen as you watch the Performance Monitor plots your system's CPU activity. The graph has a timeline along the bottom and a percentage on the side. Only tracking the CPU doesn't provide much more information than what Task Manager provides. By adding counters to the grid, you can track your system's performance. To add more counters to the graph, follow these steps:

1. Start by clicking the plus (+) sign in the toolbar located just above the graph.
2. The Add Counters dialog box, shown in Figure 47.8, shows all of the available performance objects for your system. In the left column, click the arrow to the right of the performance objects to expand and display the available counters for that object. We've selected Network Interface in Figure 47.8.

FIGURE 47.8

The Add Counters dialog box



Add Counters
Available counters
Select counters from computer:
<Local computer>
Browse...
Network Interface
Bytes Received/sec
Bytes Sent/sec
Bytes Total/sec
Current Bandwidth
Offloaded Connections
Output Queue Length
Packets Outbound Discarded
Packets Outbound Errors
Instances of selected object:
<All instances>
Intel[R] Centrino[R] Wireless-N 1030
isatap.bridgemaxx.com
Local Area Connection* 13
Realtek PCIe GBE Family Controller
<All instances>
Search
Add >>
Added counters
Counter
Parent
Inst...
Computer
Network Interface
*

Inte...
Remove <<
Show description
Help
OK
Cancel

3. Depending on the counter you select, you may also have the option of selecting an instance of that counter. In the case of the Network Interface object, depending on your computer system, there might be multiple network interfaces, as shown in the Instances Of Selected Object list box. This figure shows the Bytes Total/Sec selected as the counter and the wireless adapter for the instance.

4. Optionally, you can select the Show Description check box so you can view additional information about the counter.

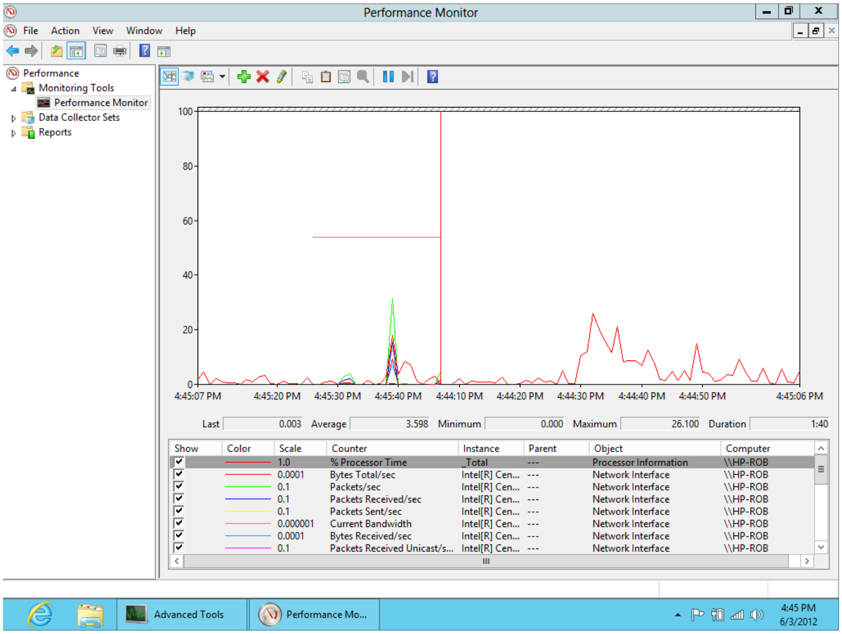
5. Click the Add button to move the selection over to the Added Counters section of the window.

6. When you've selected all of the counters you want to monitor, click OK to return to the graph.

7. As shown in Figure 47.9, the counter is added to the bottom of the window. If you select the counter in the list and click the highlighter icon in the toolbar, it highlights that specific counter. In this case, it has changed the color to a bold black. This is very helpful when you have several counters on the screen at the same time. When the highlighter is turned on, clicking any counter in the list causes that counter to be highlighted.

FIGURE 47.9

Network Interface object added to Performance Monitor


Performance Monitor
File
Action
View
Window
Help
Performance
Monitoring Tools
Performance Monitor
Data Collector Sets
Reports
100
80
60
40
20
0
4:45:07 PM
4:45:20 PM
4:45:30 PM
4:45:40 PM
4:44:10 PM
4:44:20 PM
4:44:30 PM
4:44:40 PM
4:44:50 PM
4:45:06 PM
Advanced Tools
Performance Mo...
4:45 PM
6/3/2012

Last 0.003 Average 3.598 Minimum 0.000 Maximum 26.100 Duration 1:40

Show	Color	Scale	Counter	Instance	Parent	Object	Computer
☑	🟥	1.0	% Processor Time	_Total	---	Processor Information	\\HP-ROB
☑	🟥	0.0001	Bytes Total/sec	Intel[R] Cen...	---	Network Interface	\\HP-ROB
☑	🟩	0.1	Packets/sec	Intel[R] Cen...	---	Network Interface	\\HP-ROB
☑	🟦	0.1	Packets Received/sec	Intel[R] Cen...	---	Network Interface	\\HP-ROB
☑	🟨	0.1	Packets Sent/sec	Intel[R] Cen...	---	Network Interface	\\HP-ROB
☑	🟪	0.000001	Current Bandwidth	Intel[R] Cen...	---	Network Interface	\\HP-ROB
☑	🟦	0.0001	Bytes Received/sec	Intel[R] Cen...	---	Network Interface	\\HP-ROB
☑	🟪	0.1	Packets Received Unicast/s...	Intel[R] Cen...	---	Network Interface	\\HP-ROB

The scale of the graph is set automatically. In the case of the previous example, if the network utilization went off the screen, you're able to adjust the scale for that specific counter so you have more meaningful information instead of a line running off the top of the graph.

Data collector sets and reports

The Performance Monitor interface provides a mechanism to log the information and events that occur on your system. Besides just logging the information, it also provides a way for you to use reports to look at the information.

NOTE

Data Collector Sets and Reports are very involved topics. For this reason, we cover the basics in this section and suggest searching Help for **Data Collector Sets** to get more details.

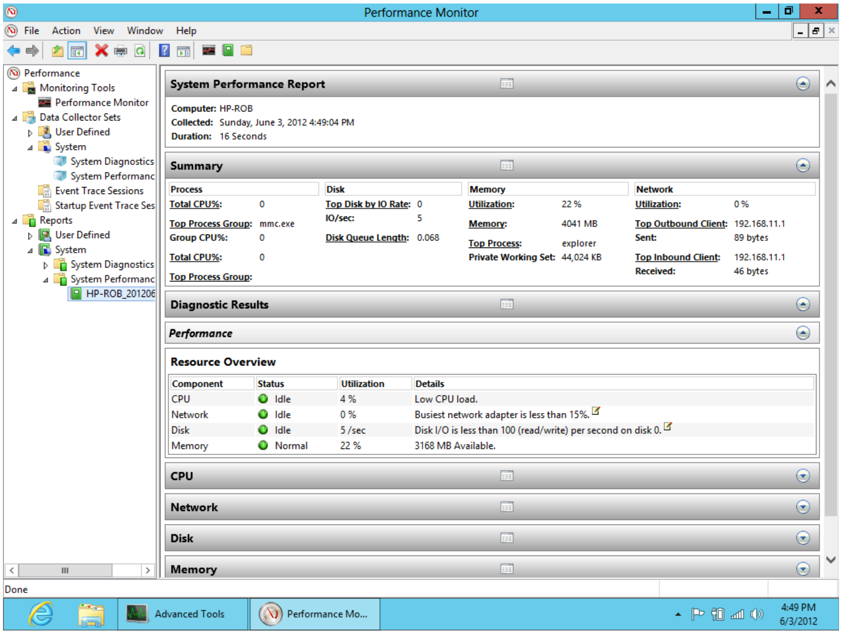
In the previous section, you learned about performance counters in Performance Monitor through the use of two examples, % Processor Time and Bytes Total/Sec. A data collector set, as its name implies, is a set of objects that collect data about your computer. So, you might create a data collector set that gathers data about specific items. For example, you could create a data collector set to gather information about network performance through the use of a variety of network counters. Or, you might create one to analyze drive performance by using multiple drive counters.

Within the Performance Monitor interface, you're able to create User-Defined Data Collector Sets, but let's start with the predefined Data Collector Sets. To get started, follow these steps:

1. Click the arrow to the left of Data Collector Sets to expand the tree beneath it. Then expand the System icon beneath Data Collector Sets and click System Performance.
2. Right-click System Performance and choose Start, or click the Start button in the toolbar. The system will start collecting data for the different components of the collector.
3. Let the system run for a while, and when you're ready, right-click System Performance again and choose Stop this time, or click the Stop button in the toolbar. Stopping the collector may take a few seconds.
4. Navigate to the Reports section within Performance Monitor and expand the System branch, as shown in Figure 47.10. In this figure, two performance reports are listed.
5. Expand or collapse different areas by clicking the arrows next to each group. Use the vertical scroll bar to see all of the different report categories.

FIGURE 47.10

System Performance reports


Performance Monitor
File
Action
View
Window
Help
Performance
Monitoring Tools
Performance Monitor
Data Collector Sets
User Defined
System
System Diagnostics
System Performanc
Event Trace Sessions
Startup Event Trace Ses
Reports
User Defined
System
System Diagnostics
System Performanc
HP-ROB_201206
Done
Advanced Tools
Performance Mo...
4:49 PM
6/3/2012

System Performance Report

Computer: HP-ROB
Collected: Sunday, June 3, 2012 4:49:04 PM
Duration: 16 Seconds

Summary

Process
Total CPU%: 0
Top Process Group: mmc.exe
Group CPU%: 0
Total CPU%: 0
Top Process Group:

Disk
Top Disk by IO Rate: 0
IO/sec: 5
Disk Queue Length: 0.068

Memory
Utilization: 22 %
Memory: 4041 MB
Top Process: explorer
Private Working Set: 44,024 KB

Network
Utilization: 0 %
Top Outbound Client: 192.168.11.1
Sent: 89 bytes
Top Inbound Client: 192.168.11.1
Received: 46 bytes

Diagnostic Results

Performance

Resource Overview

Component	Status	Utilization	Details
CPU	● Idle	4 %	Low CPU load.
Network	● Idle	0 %	Busiest network adapter is less than 15%.
Disk	● Idle	5 /sec	Disk I/O is less than 100 (read/write) per second on disk 0.
Memory	● Normal	22 %	3168 MB Available.

CPU

Network

Disk

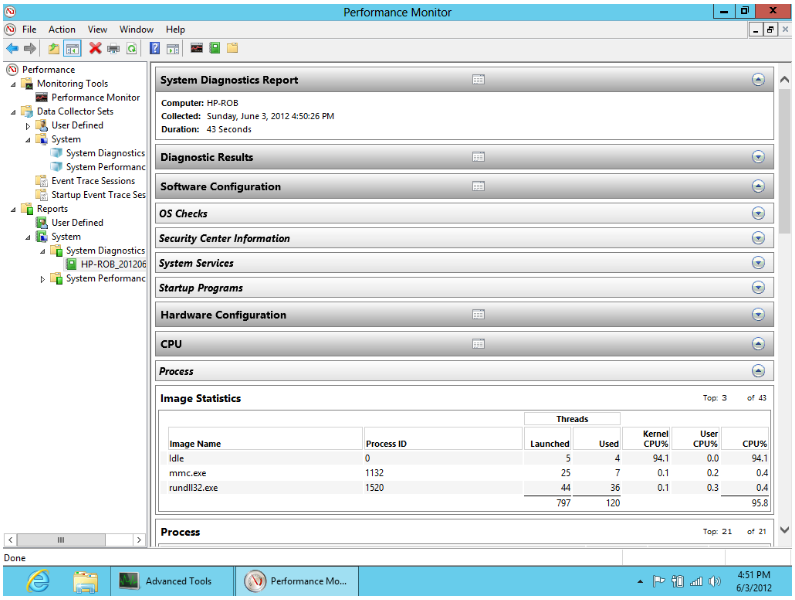
Memory

Generating system performance reports in Performance Monitor can help you understand where bottlenecks might exist in your system. For example, you can quickly identify an overtaxed CPU, problems with network saturation, or other issues.

In addition to creating performance reports with Performance Monitor, you can also create diagnostic reports. In the left pane, under Data Collector Sets, expand System and click System Diagnostics. Then, click Start in the toolbar. Wait as Performance Monitor creates the report. While the report data is being gathered, the icon next to the System Diagnostics branch shows a small green arrow. This is replaced by an hourglass while Performance Monitor generates the report. When the icon returns to normal, the report is finished. You'll find a new report under the Reports ➪ System ➪ System Diagnostics branch in the left pane. Click the report to view its contents. Figure 47.11 shows an example of a diagnostics report.

FIGURE 47.11

A diagnostics report


Performance Monitor
File
Action
View
Window
Help
Performance
Monitoring Tools
Performance Monitor
Data Collector Sets
User Defined
System
System Diagnostics
System Performanc
Event Trace Sessions
Startup Event Trace Ses
Reports
User Defined
System
System Diagnostics
HP-ROB_201206
System Performanc
Done
Advanced Tools
Performance Mo...
4:51 PM
6/3/2012

System Diagnostics Report

Computer: HP-ROB
Collected: Sunday, June 3, 2012 4:50:26 PM
Duration: 43 Seconds

Diagnostic Results

Software Configuration

OS Checks

Security Center Information

System Services

Startup Programs

Hardware Configuration

CPU

Process

Image Statistics Top: 3 of 43

		Threads				
Image Name	Process ID	Launched	Used	Kernel CPU%	User CPU%	CPU%
Idle	0	5	4	94.1	0.0	94.1
mmc.exe	1132	25	7	0.1	0.2	0.4
rundll32.exe	1520	44	36	0.1	0.3	0.4
		797	120			95.8

Process Top: 21 of 21

As with a performance report, expand and collapse different categories in the report to view the information in the report. The information in the report can help you pinpoint hardware errors and other problems.

Creating data collector sets

You're able to create your own user-defined data collector sets, which involves adding data from one of the four categories. From the properties window of the collector, you can set a variety of properties for each type, such as the sample interval maximum number of samples, registry keys to monitor, and many more.

You can add the following four types of data collectors to your custom data collector sets:

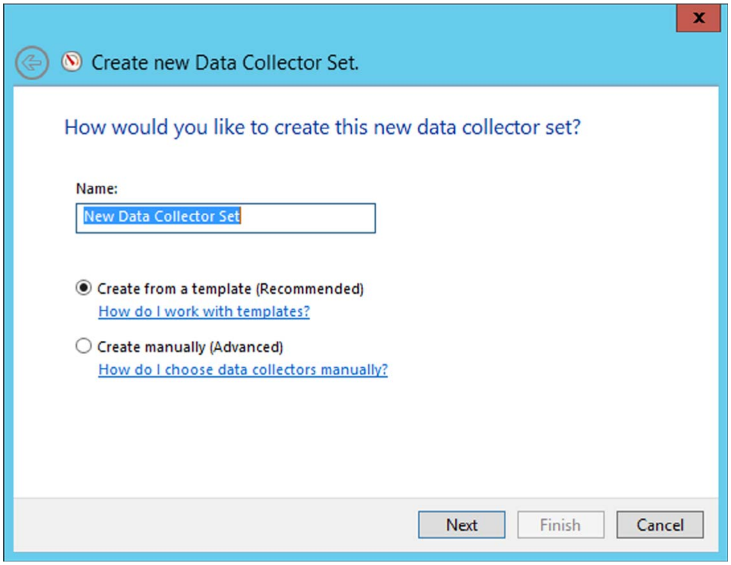
- **Performance Counter Data:** This information is the same information that you're able to gather from Performance Monitor, discussed earlier in the chapter.
- **Event Trace data:** This data is gathered when different system events occur on your system.
- **Configuration data:** This data is gathered from changes that occur to the registry of your system.
- **Performance Counter Alert:** This data is gathered when a performance counter you specify reaches a point either above or below a value that you define.

As explained previously, creating data collector sets assumes a certain level of technical capability and knowledge about how the computer and its components functions. Those topics are far outside the scope of this book. So instead, we'll focus on the mechanics of creating the data collector set:

1. Open Performance Monitor and expand the Data Collector Sets branch.
2. Right-click User Defined and choose New ➪ Data Collector Set to start the Create New Data Collector Set Wizard (see Figure 47.12).

FIGURE 47.12

Create New Data Collector Set Wizard



Create new Data Collector Set.

How would you like to create this new data collector set?

Name: New Data Collector Set

● Create from a template (Recommended)

○ Create manually (Advanced)

x
How do I work with templates?
How do I choose data collectors manually?
Next
Finish
Cancel

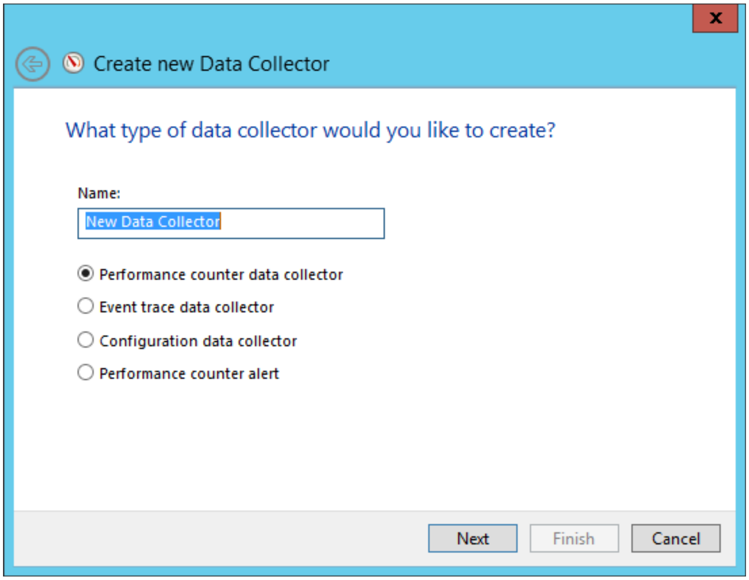
3. Enter a descriptive name in the Name text box.
4. Decide whether to create the data collector set from a template or from scratch (manually). If you choose the Create From A Template option, you can add data collectors to the ones already in the template. Click Next.
5. If you opted to start from a template, the wizard next prompts you to choose a template. Select one and click Next. Otherwise, the wizard prompts you to choose a type of data collector to add. In this example, let's assume you choose to start from a template, so choose Basic from the offered templates and then click Next.
6. Specify the directory where you want the data to be saved and click Next.
7. In the final page of the wizard, click Finish.

The new data collector set should now appear under the User Defined branch in the left pane. Let's assume that you now want to add some additional data collectors to the set. Right-click in the right pane (or on the new data collector set's name in the left pane) and choose New ➪ Data Collector.

Performance Monitor opens the Create New Data Collector Wizard (see Figure 47.13). Specify a name for the collector and choose one of the four collector types, as described previously in this section. For example, to add a performance counter, choose Performance Counter Data Collector. Then, click Next.

FIGURE 47.13

Create New Data Collector Wizard



Create new Data Collector

What type of data collector would you like to create?

Name: New Data Collector

● Performance counter data collector
○ Event trace data collector
○ Configuration data collector
○ Performance counter alert

Depending on the type of collector you choose, the wizard prompts for information about the collector. Specify the information needed to configure the collector to obtain the data you're looking for, and then click Finish.

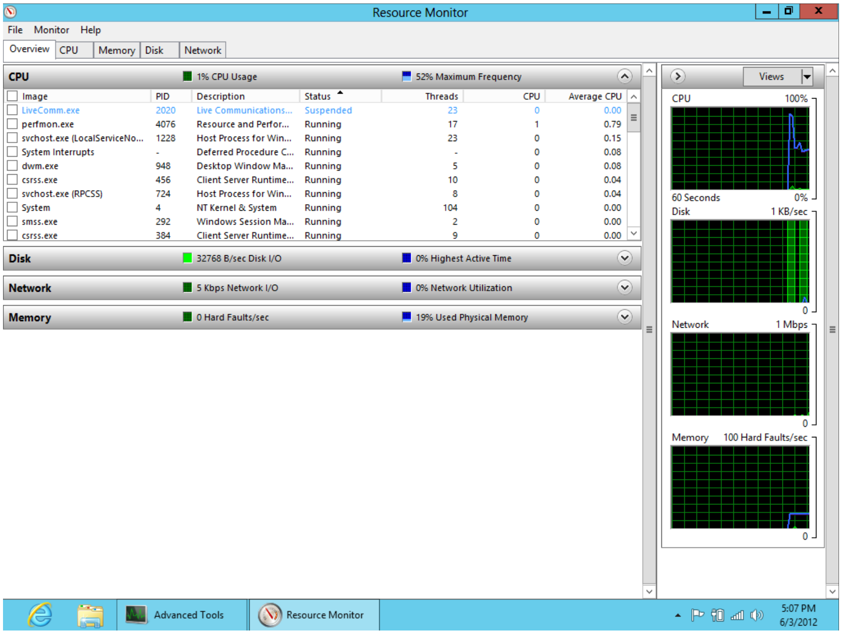
After you create the data collector set, you can use it just as you can the predefined ones in the System branch.

Resource monitor

Another handy tool for monitoring system performance is Resource Monitor, which collects and displays real-time information about the CPU, disk, network, and memory. To open Resource Monitor, first open Performance Information And Tools from the Control Panel. Click Advanced Tools in the left pane, and then click Open Resource Monitor. Figure 47.14 shows Resource Monitor.

FIGURE 47.14

Resource Monitor



CPU 🟩 1% CPU Usage 🟦 52% Maximum Frequency

☐	Image	PID	Description	Status	Threads	CPU	Average CPU
☐	LiveComm.exe	2020	Live Communications...	Suspended	23	0	0.00
☐	perfmon.exe	4076	Resource and Perfor...	Running	17	1	0.79
☐	svchost.exe (LocalServiceNo...	1228	Host Process for Win...	Running	23	0	0.15
☐	System Interrupts	-	Deferred Procedure C...	Running	-	0	0.08
☐	dwm.exe	948	Desktop Window Ma...	Running	5	0	0.08
☐	csrss.exe	456	Client Server Runtime...	Running	10	0	0.04
☐	svchost.exe (RPCSS)	724	Host Process for Win...	Running	8	0	0.04
☐	System	4	NT Kernel & System	Running	104	0	0.00
☐	smss.exe	292	Windows Session Ma...	Running	2	0	0.00
☐	csrss.exe	384	Client Server Runtime...	Running	9	0	0.00

Disk 🟩 32768 B/sec Disk I/O 🟦 0% Highest Active Time

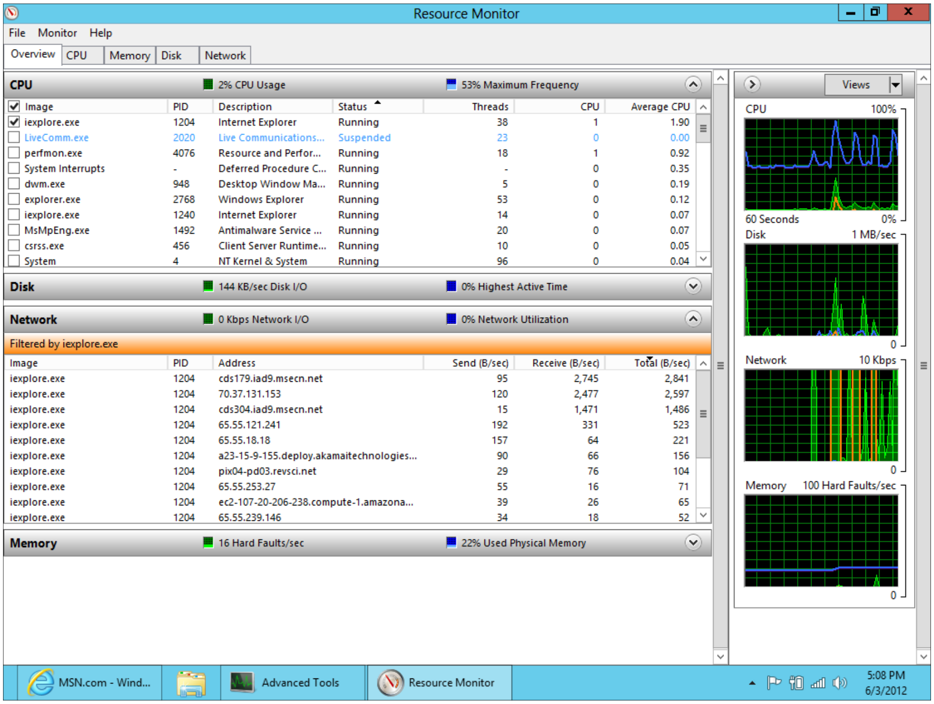
Network 🟩 5 Kbps Network I/O 🟦 0% Network Utilization

Memory 🟩 0 Hard Faults/sec 🟦 19% Used Physical Memory

The Overview tab, shown in Figure 47.14, offers summary information about each of the four categories. To view activity for a specific process, select the check box next to the process's image name in the CPU list. Then click the category header for a category to view the data filtered by the selected process. For example, Figure 47.15 shows network activity filtered for Internet Explorer.

FIGURE 47.15

Network activity filtered for Internet Explorer



CPU 🟩 2% CPU Usage 🟦 53% Maximum Frequency

☑ Image	PID	Description	Status	Threads	CPU	Average CPU
☑ iexplore.exe	1204	Internet Explorer	Running	38	1	1.90
☐ LiveComm.exe	2020	Live Communications...	Suspended	23	0	0.00
☐ perfmon.exe	4076	Resource and Perfor...	Running	18	1	0.92
☐ System Interrupts	-	Deferred Procedure C...	Running	-	0	0.35
☐ dwm.exe	948	Desktop Window Ma...	Running	5	0	0.19
☐ explorer.exe	2768	Windows Explorer	Running	53	0	0.12
☐ iexplore.exe	1240	Internet Explorer	Running	14	0	0.07
☐ MsMpEng.exe	1492	Antimalware Service ...	Running	20	0	0.07
☐ csrss.exe	456	Client Server Runtime...	Running	10	0	0.05
☐ System	4	NT Kernel & System	Running	96	0	0.04

Disk 🟩 144 KB/sec Disk I/O 🟦 0% Highest Active Time

Network 🟩 0 Kbps Network I/O 🟦 0% Network Utilization

Filtered by iexplore.exe

Image	PID	Address	Send (B/sec)	Receive (B/sec)	Total (B/sec)
iexplore.exe	1204	cds179.iad9.msecn.net	95	2,745	2,841
iexplore.exe	1204	70.37.131.153	120	2,477	2,597
iexplore.exe	1204	cds304.iad9.msecn.net	15	1,471	1,486
iexplore.exe	1204	65.55.121.241	192	331	523
iexplore.exe	1204	65.55.18.18	157	64	221
iexplore.exe	1204	a23-15-9-155.deploy.akamaitechnologies...	90	66	156
iexplore.exe	1204	pix04-pd03.revsci.net	29	76	104
iexplore.exe	1204	65.55.253.27	55	16	71
iexplore.exe	1204	ec2-107-20-206-238.compute-1.amazona...	39	26	65
iexplore.exe	1204	65.55.239.146	34	18	52

Memory 🟩 16 Hard Faults/sec 🟦 22% Used Physical Memory

Each of the other tabs in Resource Monitor provides data specific to the specified category. For example, to see detailed information about memory utilization, click the Memory tab. The top area of each tab shows the running processes. You can filter by one or more processes by selecting them from the list. Deselect the Image check box to clear the filter.

Reliability monitor

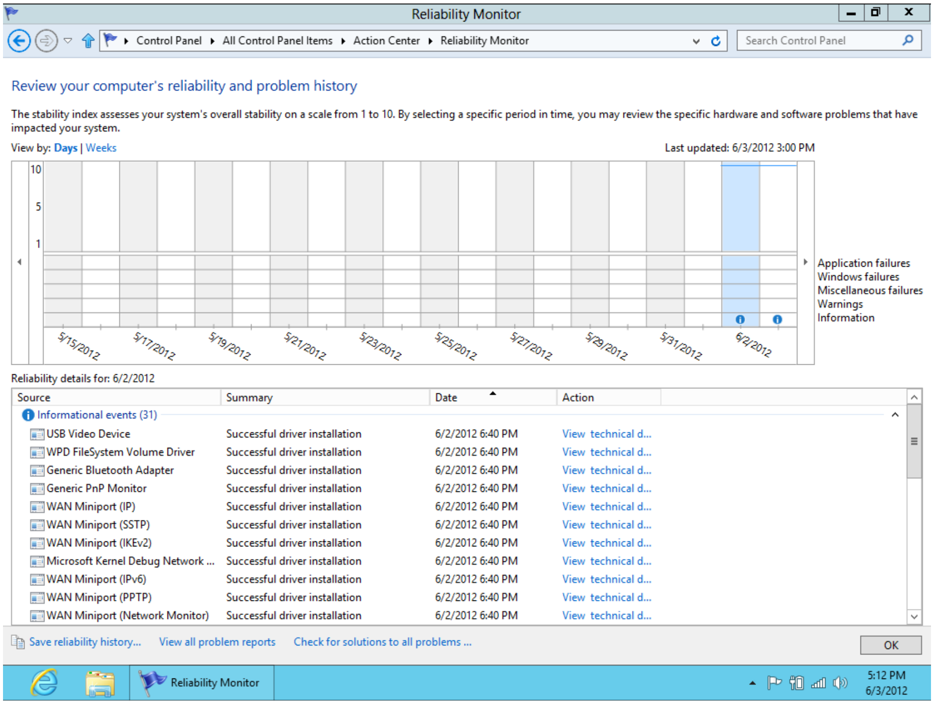
Reliability Monitor provides information regarding your system's overall stability. It tracks data and generates a report similar to the one shown in Figure 47.16, which indicates a relative reliability index from 1 to 10. Reliability Monitor uses five groups of information to determine the index, including application failures, Windows failures, miscellaneous failures, warnings, and informational events. To open Reliability Monitor, open Action Center, expand the Maintenance group, and click View Reliability History.

TIP

Reliability Monitor starts monitoring your system right after the operating system is installed and will keep one year's worth of data for analysis. Reliability Monitor requires 28 days of information before it will accurately determine a stability index. The line in the graph will also be dashed until Reliability Monitor has 28 days of information.

FIGURE 47.16

Reliability Monitor report of overall system stability


Reliability Monitor
Control Panel ▸ All Control Panel Items ▸ Action Center ▸ Reliability Monitor
Search Control Panel
10
5
1
5/15/2012
5/17/2012
5/19/2012
5/21/2012
5/23/2012
5/25/2012
5/27/2012
5/29/2012
5/31/2012
6/2/2012
Application failures
Windows failures
Miscellaneous failures
Warnings
Information
Save reliability history...
View all problem reports
Check for solutions to all problems ...
OK
Reliability Monitor
5:12 PM
6/3/2012

Review your computer's reliability and problem history

The stability index assesses your system's overall stability on a scale from 1 to 10. By selecting a specific period in time, you may review the specific hardware and software problems that have impacted your system.

View by: Days | Weeks

Last updated: 6/3/2012 3:00 PM

Reliability details for: 6/2/2012

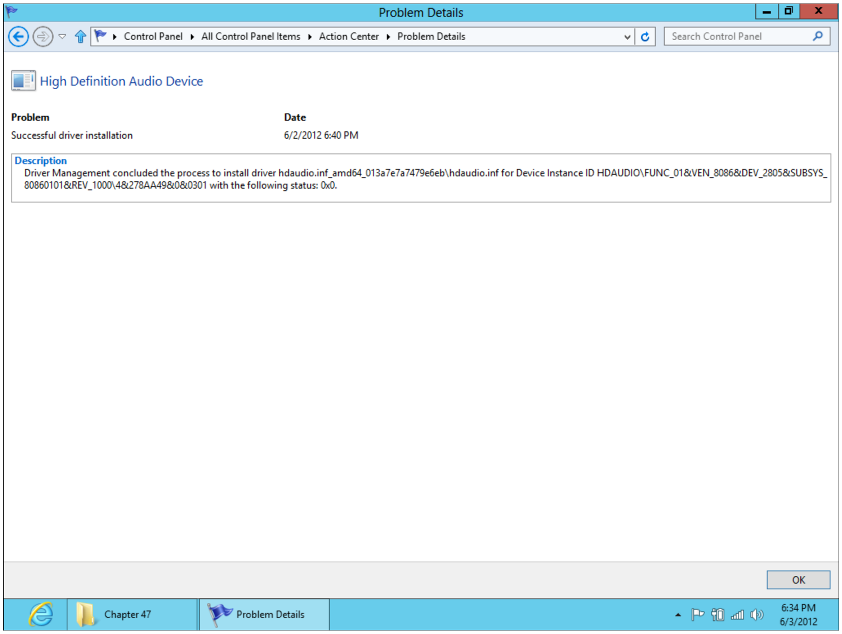
Source	Summary	Date	Action
Informational events (31)			
USB Video Device	Successful driver installation	6/2/2012 6:40 PM	View technical d...
WPD FileSystem Volume Driver	Successful driver installation	6/2/2012 6:40 PM	View technical d...
Generic Bluetooth Adapter	Successful driver installation	6/2/2012 6:40 PM	View technical d...
Generic PnP Monitor	Successful driver installation	6/2/2012 6:40 PM	View technical d...
WAN Miniport (IP)	Successful driver installation	6/2/2012 6:40 PM	View technical d...
WAN Miniport (SSTP)	Successful driver installation	6/2/2012 6:40 PM	View technical d...
WAN Miniport (IKEv2)	Successful driver installation	6/2/2012 6:40 PM	View technical d...
Microsoft Kernel Debug Network ...	Successful driver installation	6/2/2012 6:40 PM	View technical d...
WAN Miniport (IPv6)	Successful driver installation	6/2/2012 6:40 PM	View technical d...
WAN Miniport (PPTP)	Successful driver installation	6/2/2012 6:40 PM	View technical d...
WAN Miniport (Network Monitor)	Successful driver installation	6/2/2012 6:40 PM	View technical d...

The icons on the chart in Reliability Monitor indicate the type of event that occurred on the specified date. The letter i inside a blue circle is an informational event, such as an update being applied successfully to the system. A yellow triangle with an exclamation mark inside indicates a warning. An example would be a warning that a driver did not install successfully. Failures are indicated by a white X inside a red circle. Examples include an application hanging or Windows shutting down unexpectedly.

You can view the events for a particular day by clicking that day in the chart. Details for that day appear in the bottom Details pane. When viewing the graph in Weeks view, clicking a week in the graph shows all items for that week in the Details pane. Whichever view you use, double-clicking an item in the Details pane displays full information about the event. For example, Figure 47.17 shows the results of double-clicking an event related to the installed audio device on a laptop.

FIGURE 47.17

Details for an event in Reliability Monitor


Problem Details
Control Panel
All Control Panel Items
Action Center
Problem Details
Search Control Panel
OK
Chapter 47
Problem Details
6:34 PM
6/3/2012

High Definition Audio Device

Problem
Successful driver installation

Date
6/2/2012 6:40 PM

Description
Driver Management concluded the process to install driver hdaudio.inf_amd64_013a7e7a7479e6eb\hdaudio.inf for Device Instance ID HDAUDIO\FUNC_01&VEN_8086&DEV_2805&SUBSYS_80860101&REV_1000\4&278AA49&0&0301 with the following status: 0x0.

Reliability Monitor is a great tool for keeping track of the events that have occurred with your computer over a long period of time. It can be particularly useful in identifying repetitive problems or problems with specific items.

TIP

Windows ReadyBoost uses flash memory, rather than your hard drive, for the paging file. This allows programs to get drive data more quickly, providing a faster, more fluid computing experience.

Using Windows ReadyBoost

Historically, PCs had two ways to store data: memory and the hard drive. Memory (RAM) is very fast. But it's volatile, meaning everything in it gets erased the moment you shut down the computer. The hard drive isn't nearly as fast. But it has *persistence*, meaning that it retains information even when the computer is turned off.

RAM is also more expensive than hard drive storage. For example, a typical desktop computer might have 2 gigabytes of RAM. The hard drive, on the other hand, will likely hold hundreds or even thousands of gigabytes (called a terabyte) of data.

Windows 8 automatically uses the paging file (discussed earlier in this chapter) to store the data and conserve RAM.

The downside to using the paging file is that the processor cannot move data to and from it as quickly as it can with RAM. The paging file becomes a little performance bottleneck. Prior to Windows Vista, there was no real solution to the problem. Windows Vista introduced a solution called ReadyBoost that lets Windows 8 use flash memory for the paging file. For paging file operations, flash memory is about 10 times faster than a hard drive, which means ReadyBoost can get rid of many little short delays and offer a faster, smoother overall computing experience. Windows 7 and now Windows 8 support ReadyBoost.

NOTE

Contrary to popular belief, ReadyBoost doesn't add more RAM to your computer. It improves performance by using flash memory, rather than the hard drive, to store and access frequently used disk data.

Windows 8 takes care of all the potential problems that using flash memory for disk data might impose. For example, it keeps the actual paging file on the drive in sync with the copy on the flash drive. So if the flash memory suddenly disappears (as when you pull a flash drive out of its USB slot), there's no loss of data. Windows 8 even compresses and encrypts the data on the flash drive using high-strength AES encryption. If someone steals a ReadyBoost flash drive from your computer, they will not be able to read data from it to steal sensitive information.

There are basically three ways to get ReadyBoost capabilities in your system. One is to use a *hybrid* hard drive, which puts the flash memory right on the drive. Another is to have ReadyBoost capability on the computer's motherboard. If you have neither of those, the third approach is to use a USB flash drive for ReadyBoost. This is a small device, usually small enough to fit on a keychain, which you just plug into a USB 2.0 or 3.0 port on your computer.

Not all flash drives are ReadyBoost-capable. They vary greatly in their capacity and speed. Windows 8 will only use a flash drive for ReadyBoost if it makes sense to do so. An 8GB flash drive with fast random I/O capability is a good choice for ReadyBoost.

If you already have a USB flash drive and want to see if it's ReadyBoost-capable, just plug the drive into a USB slot. After Windows 8 recognizes and analyzes the drive, you'll get some feedback on the screen letting you know that you can speed up your system by utilizing the available space on your device.

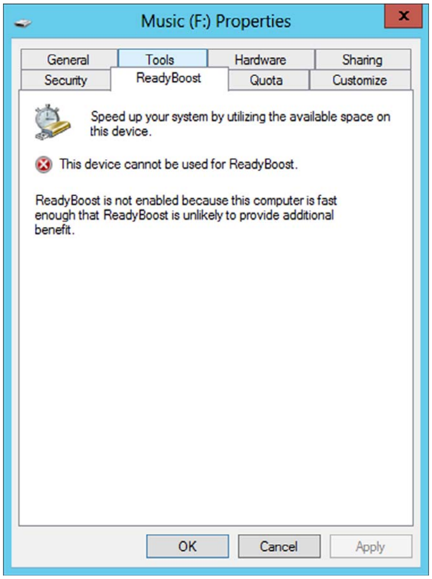
Some systems, such as newer laptops that use solid-state hard drives, will be fast enough that ReadyBoost will not provide any serious performance gains. Figure 47.18 shows an example of the ReadyBoost properties tab for a USB 2.0 flash drive. Notice that using ReadyBoost would not provide additional performance benefit to laptop.

NOTE

ReadyBoost requires that you use a USB 2.0-compliant or higher flash drive. Anything preceding USB 2.0 is too slow to work as a ReadyBoost device.

FIGURE 47.18

Windows lets you know if the USB flash drive would not benefit from ReadyBoost.



Speed up your system by utilizing the available space on this device.

This device cannot be used for ReadyBoost.

ReadyBoost is not enabled because this computer is fast enough that ReadyBoost is unlikely to provide additional benefit.

If you want to use the device as virtual memory, select the Speed Up My System option. After you've selected that option, the properties for the removable disk will pop up. You can also bring up that dialog box by opening your Computer folder, right-clicking the drive's icon, and choosing Properties.

Select the Use This Device option and then you are able to set the amount of space for ReadyBoost. By default, Windows sets the value to the recommended amount and also lets you know that the space you allocate won't be available for general use. When you've set your value, click OK.

ReadyBoost works by copying as much of the information as possible from virtual memory to the USB thumb drive. There is still a copy of all of the information within virtual memory; the system now knows to look at the ReadyBoost device first. If the system can't find the information there, it looks to the real virtual memory located on your hard drive. By keeping the original copy on your hard drive, you can remove your USB thumb drive without disrupting the computer.

Don't expect to see everything suddenly run faster with ReadyBoost. Its benefits might not be immediate. Remember, the main purpose of ReadyBoost is to eliminate the short delays you might experience when loading certain programs, switching among open programs, and performing other activities that usually involve a paging file. With time, you should experience quicker response times in those areas. You might even find your computer starts more quickly because it takes less time to load programs at startup.

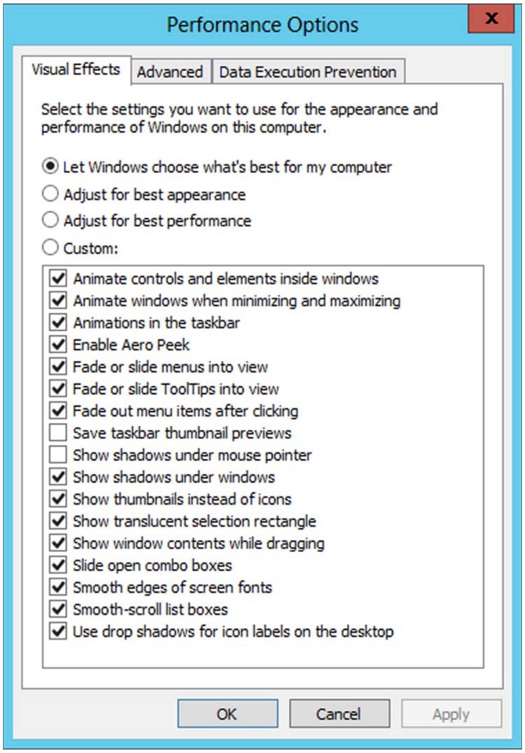
Trading pretty for performance

All of the visual effects you see on your screen while using Windows come with a price. It takes CPU resources to show drop-shadows beneath 3D objects, make objects fade into and out of view, and so forth. On an old system that has minimal CPU capabilities and memory, those little visual extras can bog down the system.

To change settings that control visual effects, open Performance Information And Tools from the Control Panel. In the left pane, click Adjust Visual Effects to open the Performance Options dialog box shown in Figure 47.19.

FIGURE 47.19

The Visual Effects tab of the Performance Options dialog box



Select the settings you want to use for the appearance and performance of Windows on this computer.

● Let Windows choose what's best for my computer
○ Adjust for best appearance
○ Adjust for best performance
○ Custom:

☑ Animate controls and elements inside windows
☑ Animate windows when minimizing and maximizing
☑ Animations in the taskbar
☑ Enable Aero Peek
☑ Fade or slide menus into view
☑ Fade or slide ToolTips into view
☑ Fade out menu items after clicking
☐ Save taskbar thumbnail previews
☐ Show shadows under mouse pointer
☑ Show shadows under windows
☑ Show thumbnails instead of icons
☑ Show translucent selection rectangle
☑ Show window contents while dragging
☑ Slide open combo boxes
☑ Smooth edges of screen fonts
☑ Smooth-scroll list boxes
☑ Use drop shadows for icon labels on the desktop

The Visual Effects tab of the Performance Options dialog box lets you choose how much performance you're willing to part with for a "pretty" interface. As shown in Figure 47.19, the Visual Effects tab gives you four main options:

- **Let Windows Choose What's Best For My Computer:** Use this option to enable Windows to automatically choose visual effects based on the capabilities of your computer.
- **Adjust for Best Appearance:** If selected, all visual effects are used, even at the cost of slowing down performance.
- **Adjust for Best Performance:** This option minimizes visual effects to preserve overall speed and responsiveness.
- **Custom:** With this option, you can then pick and choose any or all of the visual effects listed beneath the Custom option.

How you choose options is entirely up to you. If you have a powerful system, the visual effects won't impact performance much, if at all. So, there's no need to turn off the visual effects. But if your computer isn't immediately responsive to operations that involve opening and closing menus, dragging, and other things you do on the screen, eliminating some visual effects should help make your computer more responsive.

Maintaining Your Hard Drive

While the CPU and RAM are the most important factors for system performance, your hard drive plays an important role in determining the overall speed of your computer. That's because the hard drive comes into play when you're opening programs or documents, when you're saving documents, or when you're moving and copying files. By moving less-used applications to your hard drive from RAM, it also comes into play when you are running low on RAM. So keeping the hard drive running as near to peak performance as possible will have a positive impact on system performance.

Recovering wasted hard drive space

At any given time, some of the space on your hard drive is being eaten up by *temporary files*. As the name implies, temporary files are not like the programs you install or documents you save. Programs, apps, and documents are "forever," in the sense that Windows never deletes them at random. The only time a program is deleted, for example, is when you use Programs in Control Panel to remove the program. Likewise, documents aren't deleted unless you intentionally delete them and also empty the Recycle Bin. Finally, Windows 8 apps can be removed from the Windows 8 interface.

The files in your *Internet cache*, also called your Temporary Internet Files folder, are good examples of temporary files. Every time you visit a web page, all the text and pictures that make up that page are stored in your Internet cache. When you use the Back or Forward button to revisit a page you've viewed recently, your browser just pulls a copy of the page out of the Internet cache. That saves a lot of time when compared to how long it would take to re-download a page each time you clicked the Back or Forward button to revisit a recently viewed page.

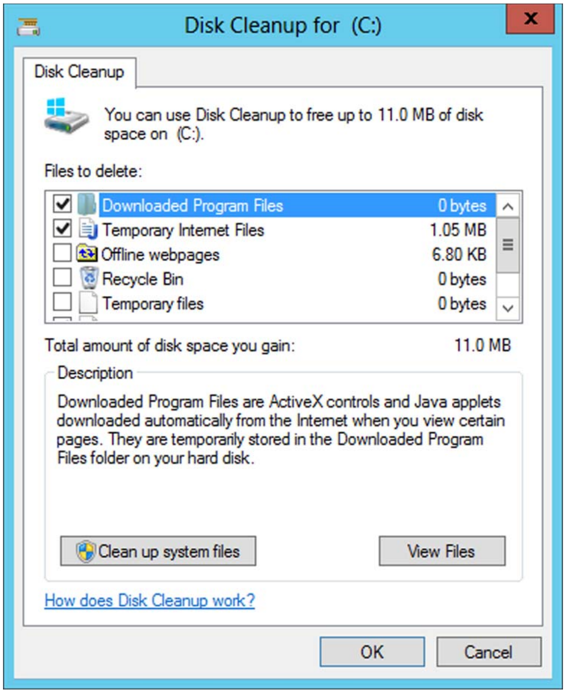
CAUTION

Before you click the Disk Cleanup tool, be forewarned that the process could take several minutes, maybe longer. It's never necessary to use Disk Cleanup to get rid of temporary files.

To recover some wasted disk space, click the Disk Cleanup button on the Properties sheet for the hard drive. Open the Computer folder, right-click a drive, and choose Properties. In the Properties dialog box, click the Disk Cleanup button. Disk Cleanup then analyzes the drive for expendable files. Eventually, you'll get to the Disk Cleanup dialog box shown in Figure 47.20. The Files To Delete list shows categories of temporary files. When you click a category name, the Description below the names explains the types of files in that category. All the categories represent temporary files that you can definitely safely delete. There won't ever be any important programs or documents you saved on your own in the list of temporary files.

FIGURE 47.20

The Disk Cleanup dialog box



You can use Disk Cleanup to free up to 11.0 MB of disk space on (C:).

Files to delete:

☑	Downloaded Program Files	0 bytes
☑	Temporary Internet Files	1.05 MB
☐	Offline webpages	6.80 KB
☐	Recycle Bin	0 bytes
☐	Temporary files	0 bytes

Total amount of disk space you gain: 11.0 MB

Description

Downloaded Program Files are ActiveX controls and Java applets downloaded automatically from the Internet when you view certain pages. They are temporarily stored in the Downloaded Program Files folder on your hard disk.

The number to the right of each category name indicates how much drive space the files in that category are using, and how much space you'll gain if you delete them. Choose which categories of files you want to delete by selecting (checking) their check boxes. If you don't want to delete a category of files, clear the checkmark for that category. The amount of drive space you'll recover by deleting all the selected categories appears under the list. After you've selected the categories of files you want to delete, click OK. The files are deleted and the dialog box closes.

Deleting system restore files and unwanted features

If you click the Clean Up System Files button in Disk Cleanup, a More Options tab appears on the Disk Cleanup dialog box. Clicking that tab provides two more options for freeing up drive space:

- **Programs and Features:** Takes you to the Programs And Features window, where you can uninstall programs and Windows Features you don't use.
- **System Restore and Shadow Copies:** Deletes all restore points except the most recent one. This can be significant because system protection files are allowed to consume up to 15 percent of your available drive space.

For more information on removing programs, see Chapter 40, "Repairing and Removing Programs." For more information on restore points, see Chapter 31, "Protecting Your Files."

Defragmenting and optimizing your hard drive

When a drive is newly formatted, most of the free space on the drive is available in a contiguous chunk. This means the disk *clusters* (the smallest amount of storage space that can be allocated) are side-by-side in contiguous fashion. As Windows writes a file, it can do so in contiguous clusters, writing the entire file in one pass. When it reads the file back, it can also do so in one pass, making drive performance as good as possible.

However, the more a drive is used, the more fragmented the data becomes. Instead of writing data contiguously, Windows writes it here and there on the drive, splitting up the file into fragments (thus the term fragmentation).

TIP

Data is not stored on solid-state hard drives the same way it is stored on traditional hard drives. Because of this, fragmentation of data does not exist, so defragmentation is not necessary for solid-state drives.

When that happens, the drive head has to move around a lot to read and write files. You might even be able to hear the drive chattering when things get really fragmented across the drive. This puts some extra stress on the mechanics of the drive and also slows things down a bit.

To really get things back together and running smoothly, you can *defragment* (or *defrag* for short) the drive. When you do, Windows takes most of the files that are split up into little chunks and brings them all together to make them contiguous again. It also moves most files to the beginning of the drive, where they're easiest to get to. The result is a drive that's no longer fragmented, doesn't chatter as much, and runs faster.

Defragmenting is one of those things you don't really have to do too often. Four or five times a year is probably sufficient. The process could take a few minutes or up to several hours. So it's another one of those tasks that you'll probably want to run overnight. However, note that Windows 8, by default, defragments the drive. You can view the current schedule, if any, in the Disk Defragmenter program.

TIP

You don't have to stop using the computer while Windows defragments the drive. You can continue to use it as you normally would. Doing so, however, continues to generate read/write operations on the drive, which ultimately slows down the defragmentation process. For that reason, it's best to run the defragmentation operation while you are not using the computer.

To defragment a hard drive, starting at the desktop:

1. Open the Computer folder in File Explorer.
2. Right-click the icon for your hard drive (C:), and choose Properties.
3. In the Properties dialog box that opens, click the Tools tab.
4. Click the Optimize button. The Optimize Drives program opens, as shown in Figure 47.21.

TIP

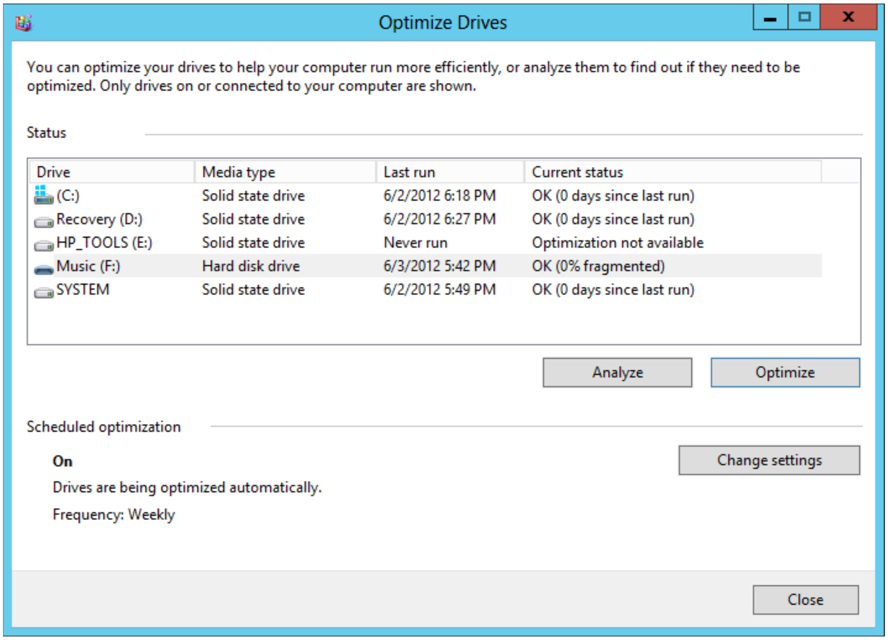
When you see a message that says you don't need to defragment, that doesn't mean that you can't or shouldn't. It just means the drive's not badly fragmented. But you can still defragment it.

5. In the Optimize Drives dialog box, you're able to set up a schedule to run the optimizer. Click Change Settings to establish that schedule. You also can click the Analyze button to get the current status of the drive and to see if an optimization process (defragmentation) would be beneficial. The program will start analyzing your drive and may take as little as a few minutes or up to a few hours.

6. When the defragmentation is complete, the Current Status column shows an OK (0% Fragmented) message for the drive you optimized.

FIGURE 47.21

The Disk Defragmenter default settings



You can optimize your drives to help your computer run more efficiently, or analyze them to find out if they need to be optimized. Only drives on or connected to your computer are shown.

Status

Drive	Media type	Last run	Current status
(C:)	Solid state drive	6/2/2012 6:18 PM	OK (0 days since last run)
Recovery (D:)	Solid state drive	6/2/2012 6:27 PM	OK (0 days since last run)
HP_TOOLS (E:)	Solid state drive	Never run	Optimization not available
Music (F:)	Hard disk drive	6/3/2012 5:42 PM	OK (0% fragmented)
SYSTEM	Solid state drive	6/2/2012 5:49 PM	OK (0 days since last run)

Scheduled optimization

On

Drives are being optimized automatically.

Frequency: Weekly

When you optimize the drive, the Disk Defragmenter tool defragments all the fragmented files and moves some frequently used files to the beginning of the drive, where they can be accessed in the least time with the least effort. Some files won't be moved. That's normal. If Windows decides to leave them where they are, it's for good reason. You may hear a lot of drive chatter as Disk Defragmenter is working. That's because the drive head is moving things around to get everything into a better position.

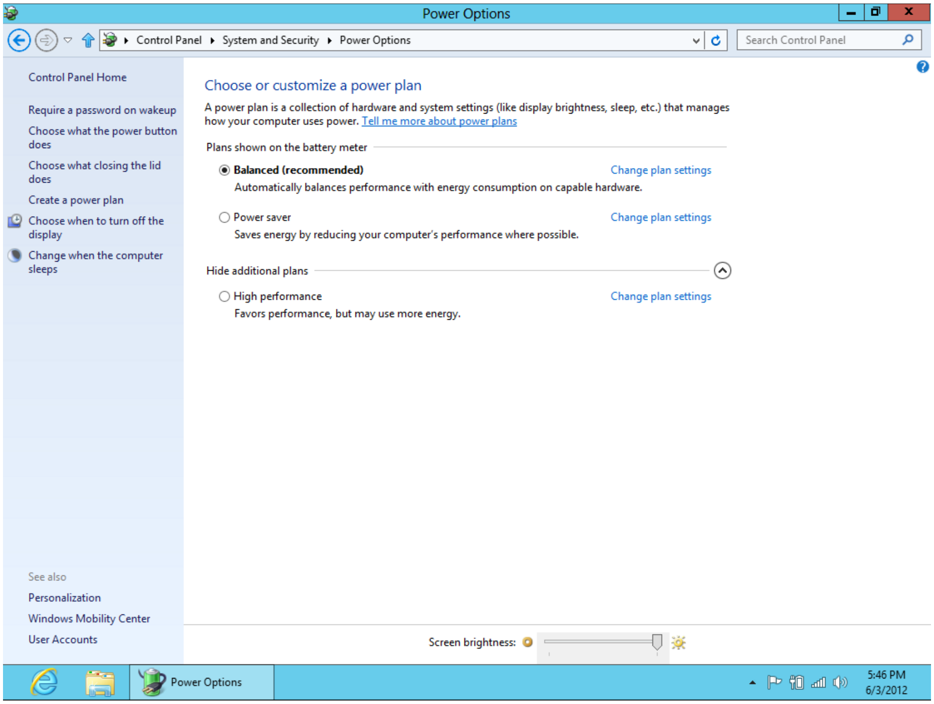
When Disk Defragmenter is finished, you can just close any open dialog boxes and the Disk Defragmenter program window.

The Power Settings

The power settings under Power Options in the Control Panel provide features that enable you to adjust the performance of your system while conserving energy. To get to the power options for your system, open Control Panel. If the Control Panel opens in Category view, click the System And Security link. Then click the Power Options icon. The Power Options applet will open, as shown in Figure 47.22. Click the down arrow beside Show Additional Plans to show the High Performance plan.

FIGURE 47.22

The different options for power settings for a laptop computer


Power Options
Control Panel ▸ System and Security ▸ Power Options
Search Control Panel
Control Panel Home
Require a password on wakeup
Choose what the power button does
Choose what closing the lid does
Create a power plan
Choose when to turn off the display
Change when the computer sleeps
See also
Personalization
Windows Mobility Center
User Accounts
Power Options
5:46 PM
6/3/2012

Choose or customize a power plan

A power plan is a collection of hardware and system settings (like display brightness, sleep, etc.) that manages how your computer uses power. Tell me more about power plans

Plans shown on the battery meter

● **Balanced (recommended)** — Change plan settings
Automatically balances performance with energy consumption on capable hardware.

○ Power saver — Change plan settings
Saves energy by reducing your computer's performance where possible.

Hide additional plans

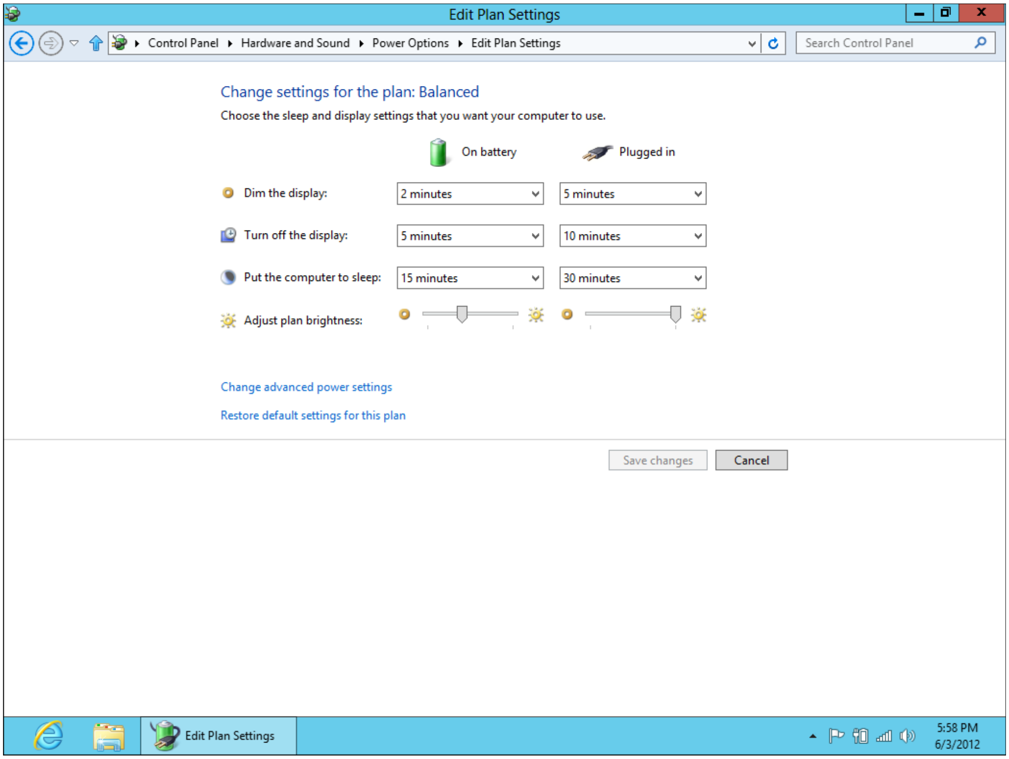
○ High performance — Change plan settings
Favors performance, but may use more energy.

Screen brightness:

The Power Options applet provides the basic configuration for the power options on your system. The three plans listed — Balanced, Power Saver, and High Performance — are the default power plans for the system. You're able to alter the settings for the three default plans by either clicking the Change Plan Settings link beside the plan or, for the selected plan, clicking either Choose When To Turn Off The Display or Change When The Computer Sleeps from the left column. Clicking any of these links brings up the Edit Plan Settings dialog box shown in Figure 47.23.

FIGURE 47.23

The basic options for setting the power conservation features of Windows 8 running on a laptop computer


Edit Plan Settings
Control Panel ▸ Hardware and Sound ▸ Power Options ▸ Edit Plan Settings
Search Control Panel
Change advanced power settings
Restore default settings for this plan
Save changes
Cancel
Edit Plan Settings
5:58 PM
6/3/2012

Change settings for the plan: Balanced

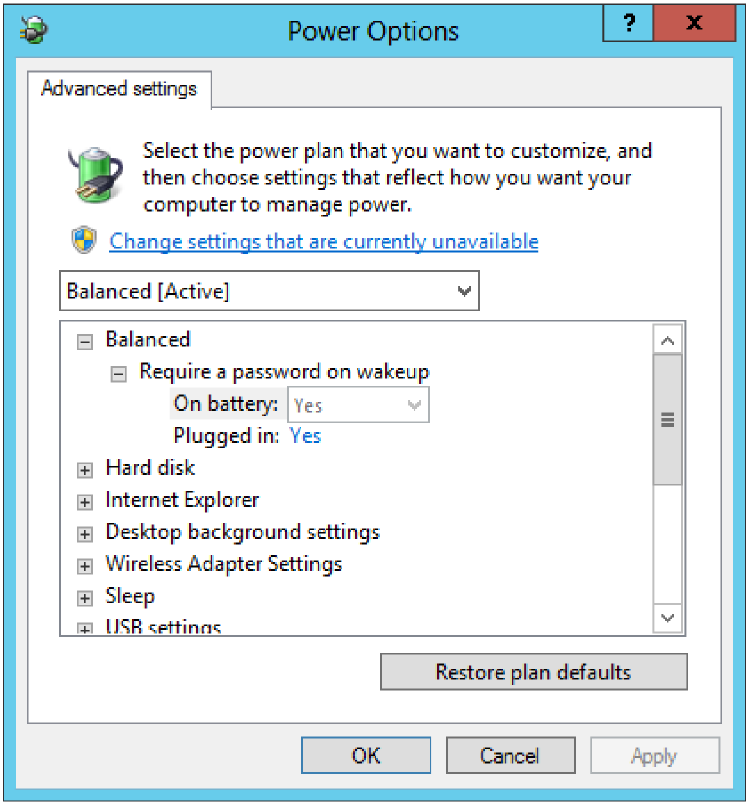
Choose the sleep and display settings that you want your computer to use.

	On battery	Plugged in
Dim the display:	2 minutes	5 minutes
Turn off the display:	5 minutes	10 minutes
Put the computer to sleep:	15 minutes	30 minutes
Adjust plan brightness:		

Adjusting either of these options alters the default plan you have selected. Clicking the Change Advanced Power Settings link brings up the Power Options dialog box, which includes the Advanced Settings tab shown in Figure 47.24.

FIGURE 47.24

The Advanced power settings



Power Options
?
x
Advanced settings

Select the power plan that you want to customize, and then choose settings that reflect how you want your computer to manage power.

Change settings that are currently unavailable
Balanced [Active]
Balanced
Require a password on wakeup

On battery: Yes

Plugged in: Yes

Hard disk
Internet Explorer
Desktop background settings
Wireless Adapter Settings
Sleep
USB settings
Restore plan defaults
OK
Cancel
Apply

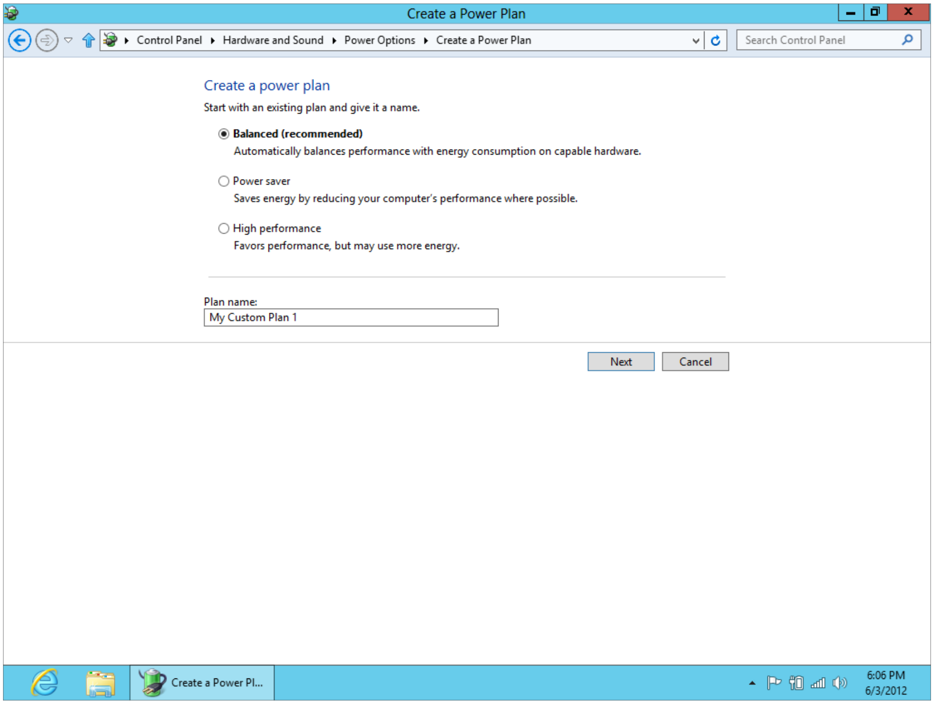
With these options, you're able to drill down on individual options at a more granular level. If you change something that you think you shouldn't have, you can click the Restore Default Settings For This Plan link to get back to where you were. Note that notebook computers have additional power options not typically available on desktops.

Create a power plan

If none of the default options meet your needs and you'd like to build your own power plan, click the fourth link on the left side of the Power Options applet, Create A Power Plan. Clicking this link brings up the window shown in Figure 47.25.

FIGURE 47.25

The first step to creating your own power plan


Create a Power Plan
Control Panel ▸ Hardware and Sound ▸ Power Options ▸ Create a Power Plan
Search Control Panel
Create a Power Pl...
6:06 PM
6/3/2012

Create a power plan

Start with an existing plan and give it a name.

● **Balanced (recommended)**
Automatically balances performance with energy consumption on capable hardware.

○ Power saver
Saves energy by reducing your computer's performance where possible.

○ High performance
Favors performance, but may use more energy.

Plan name:
My Custom Plan 1

Next
Cancel

To make it easier, Windows lets you create your power plan from one of the three defaults. You're also able to name the plan on this page. After you've set the name of your plan, click Next. The next window allows you to set when you want to turn off the display and when you want to put the computer to sleep.

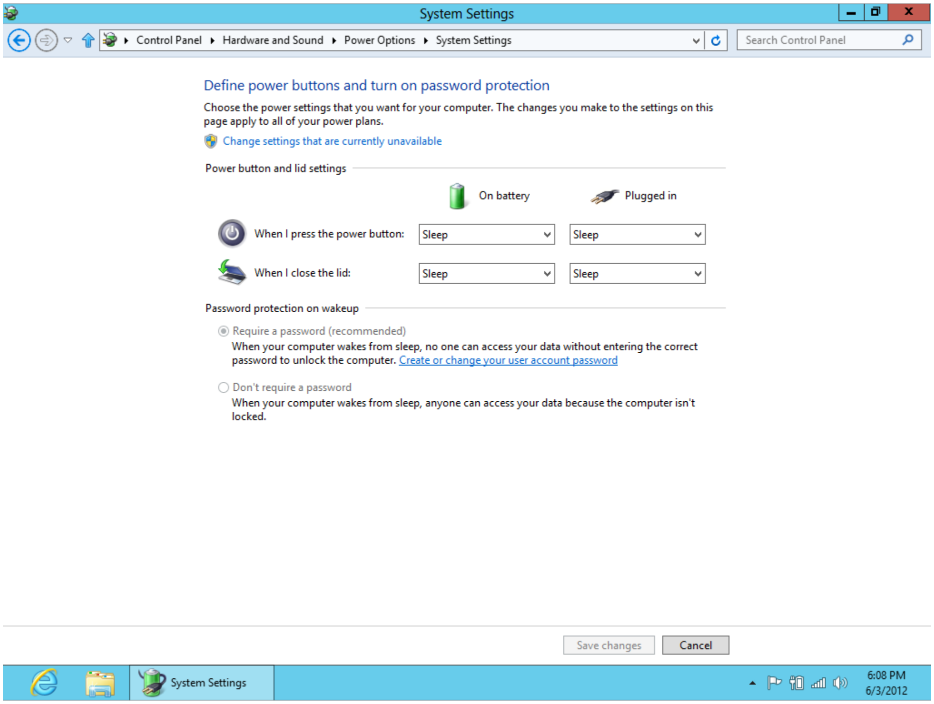
After you've configured these last two options, click the Create button. When you are back at the Power Options applet, your plan should be first on the list and selected. If you want to change some of the advanced options in your plans, click the Change Plan Settings link and then click Change Advanced Power Settings as mentioned earlier in the chapter.

System settings

Clicking the first two links on the left side of the Power Options applet, either Require A Password On Wakeup or Choose What The Power Button Does, takes you to the System Settings page shown in Figure 47.26.

FIGURE 47.26

Options for power buttons and password protection on a laptop computer



System Settings
Control Panel ▸ Hardware and Sound ▸ Power Options ▸ System Settings
Search Control Panel

Define power buttons and turn on password protection

Choose the power settings that you want for your computer. The changes you make to the settings on this page apply to all of your power plans.

Change settings that are currently unavailable

Power button and lid settings

	On battery	Plugged in
When I press the power button:	Sleep	Sleep
When I close the lid:	Sleep	Sleep

Password protection on wakeup

● Require a password (recommended)

When your computer wakes from sleep, no one can access your data without entering the correct password to unlock the computer. Create or change your user account password

○ Don't require a password

When your computer wakes from sleep, anyone can access your data because the computer isn't locked.

With older computers, when you pressed the power button, the system would power off. With current computers, the power buttons take on a different role. Under the first heading in this window, Power Button Settings, you determine what happens when the power button is pushed. You're given two options:

- **Sleep:** If you select this option, the data you are working on will be stored in memory and to the hard drive. The system will run using very little power until you press the keyboard or move the mouse. On a notebook computer, when Windows notices that the system is running low on battery power, Windows starts writing the information to the hard drive. Upon restarting, the system moves all of the information from the hard drive to memory, just as the system was left originally. Usually, it takes two to three seconds to bring the computer back from Sleep. Sleep mode is not limited to notebooks. Most newer desktop computers also support it.
- **Shut Down:** This selection shuts down the computer without saving any of the data you have in memory. Windows prompts you to save your work before you shut down. This method does a graceful shutdown of Windows.

After you've determined which option you want, click the Save Changes button.

On the System Settings window, you're also able to set the password option for what happens when the computer wakes up. As indicated by the text next to each of the options, when your system wakes from Sleep, the user may be prompted for a password. Obviously, the more secure option is to use a password. However, if this is your home system and you are the only one with physical access to the system, it's sufficient to pick the second option.

NOTE

The settings described in this section are the most common settings based on the hardware. For instance, if you're using a laptop, you may have two additional or different options on the left side of the Power Options window: Choose What Closing The Lid Does and Choose What Power Buttons Do. These options are specific to the system and offer additional options for power management.

With all of the power options available in Windows 8, you should be able to conserve resources on your system while still making your system very responsive. The power options will probably benefit a portable user more so than a desktop user.

Wrap-Up

The components of your computer system that most affect performance are its CPU and memory, but hard drive performance also affects overall system performance. (Internet access speed is determined primarily by the bandwidth of your Internet connection but can also be affected by slow system performance.) As an alternative to buying a faster computer, you can do some things to make your current computer run faster, and keep it running at top speed. The main points in this chapter are as follows:

- The System Information program provides detailed information about all the components that make up your computer system.
- To ensure that your computer is responsive to your every mouse click and keyboard tap, Windows automatically prioritizes programs as foreground (high-priority) and background (low-priority) tasks.
- When your system runs out of physical memory (RAM), Windows automatically uses a portion of the hard drive as virtual memory to handle the overflow.
- ReadyBoost uses flash memory to store frequently accessed disk files to provide a faster, more fluid computing experience.
- If your computer is usually sluggish and unresponsive, consider turning off some of Windows 8's visual effects.

- The speed of your hard drive determines how long it takes to open and save files.
- To keep your hard drive running at top speed, consider deleting temporary files, scanning for and fixing bad sectors, and defragmenting the drive a couple of times a year.
- Power settings play a role in your system's overall performance and can also be adjusted to conserver power, especially when using a laptop.

CHAPTER 48

Troubleshooting Hardware and Performance

IN THIS CHAPTER

- Troubleshooting common hardware and device driver issues
- Connecting to your Bluetooth device
- Troubleshooting startup issues using System Recovery Options
- Troubleshooting slow or unresponsive system performance

This chapter discusses the components of your computer and addresses some common problems and their solutions. Additionally, you'll find information for troubleshooting Bluetooth connectivity. Finally, we provide information for troubleshooting general performance issues.

First Aid for Troubleshooting Hardware

Whenever you have a hardware problem that's causing a device to misbehave or just not work at all, finding an updated driver is usually your best bet. But even before you do that, you might want to try Windows' built-in troubleshooting tools to see if they can resolve the problem.

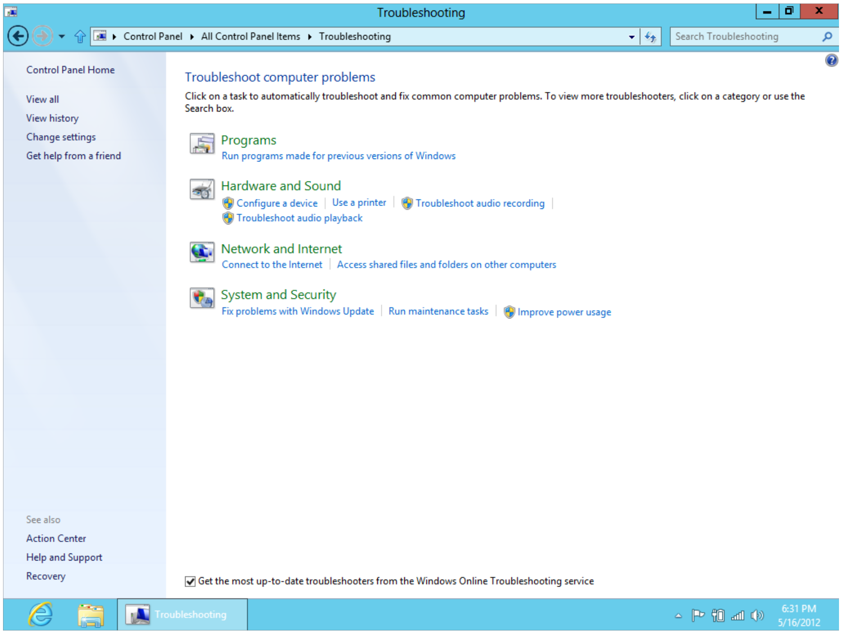
To get help on programs, hardware, and drivers, open the Troubleshooting applet from the Control Panel (see Figure 48.1). Once you have Control Panel open, click the System And Security category. Under Action Center, click Troubleshoot Common Computer Problems. Each of the items in this Control Panel applet provides a troubleshooting wizard that can automatically search for, detect, and potentially fix problems. The applet offers the following groups:

- **Programs:** Launch the Program Compatibility Troubleshooter, which enables you to apply settings to programs to make them run as if they were running in an earlier version of Windows. For example, you can potentially run a Windows XP program under Windows 8 by configuring its compatibility settings for Windows XP. This troubleshooting group also provides help for Internet Explorer issues, printer issues, and Media Player problems.

- **Hardware And Sound:** Use the Hardware And Sound item to scan for hardware changes and troubleshoot problems with general devices, printers, network adapters, and audio devices.
- **Network And Internet:** Troubleshoot problems connecting to the Internet or accessing shared files and folders on a local area network. Also troubleshoot Homegroup, incoming network connections, and DirectAccess.
- **System And Security:** Troubleshoot problems with Windows Update, modify power settings, check for computer performance issues, and run maintenance tasks, including cleaning up unused files and shortcuts. Also, check search and indexing problems, and adjust performance settings.

FIGURE 48.1

The Troubleshooting applet provides options for troubleshooting hardware and driver issues


Troubleshooting
Control Panel ▸ All Control Panel Items ▸ Troubleshooting
Search Troubleshooting
Control Panel Home
View all
View history
Change settings
Get help from a friend
Troubleshoot computer problems
Programs
Run programs made for previous versions of Windows
Hardware and Sound
Configure a device | Use a printer | Troubleshoot audio recording |
Troubleshoot audio playback
Network and Internet
Connect to the Internet | Access shared files and folders on other computers
System and Security
Fix problems with Windows Update | Run maintenance tasks | Improve power usage
See also
Action Center
Help and Support
Recovery
Troubleshooting
6:31 PM
5/16/2012

Click on a task to automatically troubleshoot and fix common computer problems. To view more troubleshooters, click on a category or use the Search box.

☑ Get the most up-to-date troubleshooters from the Windows Online Troubleshooting service

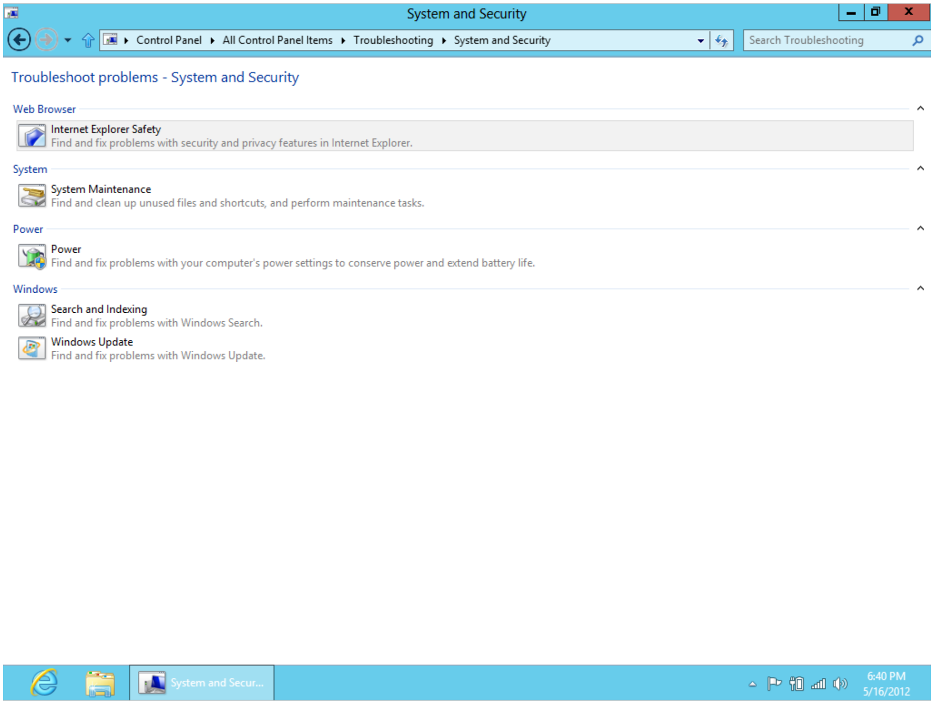
The Troubleshooting applet lists only some of the items for each category. Click the group name (such as Hardware And Sound or Network And Internet) to see all of the troubleshooting tools for that category. Figure 48.2, for example, shows the System And Security category.

TIP

Make sure to leave enabled the option at the bottom of the Troubleshooting window, Get The Most Up-To-Date Troubleshooters From The Windows Online Troubleshooting Service, to allow Windows to update the troubleshooters as new or modified ones become available.

FIGURE 48.2

The System And Security category


System and Security
Control Panel ▸ All Control Panel Items ▸ Troubleshooting ▸ System and Security
Search Troubleshooting
System and Secur...
6:40 PM
5/16/2012

Troubleshoot problems - System and Security

Web Browser

Internet Explorer Safety
Find and fix problems with security and privacy features in Internet Explorer.

System

System Maintenance
Find and clean up unused files and shortcuts, and perform maintenance tasks.

Power

Power
Find and fix problems with your computer's power settings to conserve power and extend battery life.

Windows

Search and Indexing
Find and fix problems with Windows Search.

Windows Update
Find and fix problems with Windows Update.

An alternative is to troubleshoot from the hardware device's Properties dialog box in Device Manager. To open Device Manager, press Windows+X and click Device Manager. If you are on the Start screen, simply start typing **dev**, click Settings, and then click Device Manger. You also can show the Charms Bar, type **dev**, click Settings, and click Device Manager. In Device Manager:

1. Right-click the name of the device that's causing problems and choose Properties.

2. If the device shows an error in the Device Manager (see Figure 48.3), use that information to begin troubleshooting. For example, if Device Manager indicates that there is no driver installed, try installing or reinstalling the device's driver.
3. If needed, use the options on the Driver tab to reinstall the drivers for the device. You can also disable the device from this tab and eliminate potential conflicts with other devices.
4. On the Resources tab (see Figure 48.4), check for a conflict message under Conflicting Device List and resolve problems by reassigning resources to the conflicting devices, or by disabling one of them. Note that not all hardware devices will have a Resources tab.

TIP

If you've made a hardware change but Windows hasn't noticed the change, open Device Manager and choose Action ⇨ Scan For Hardware Changes to have Windows rescan the system.

FIGURE 48.3

Use Device Manager to help troubleshoot hardware problems

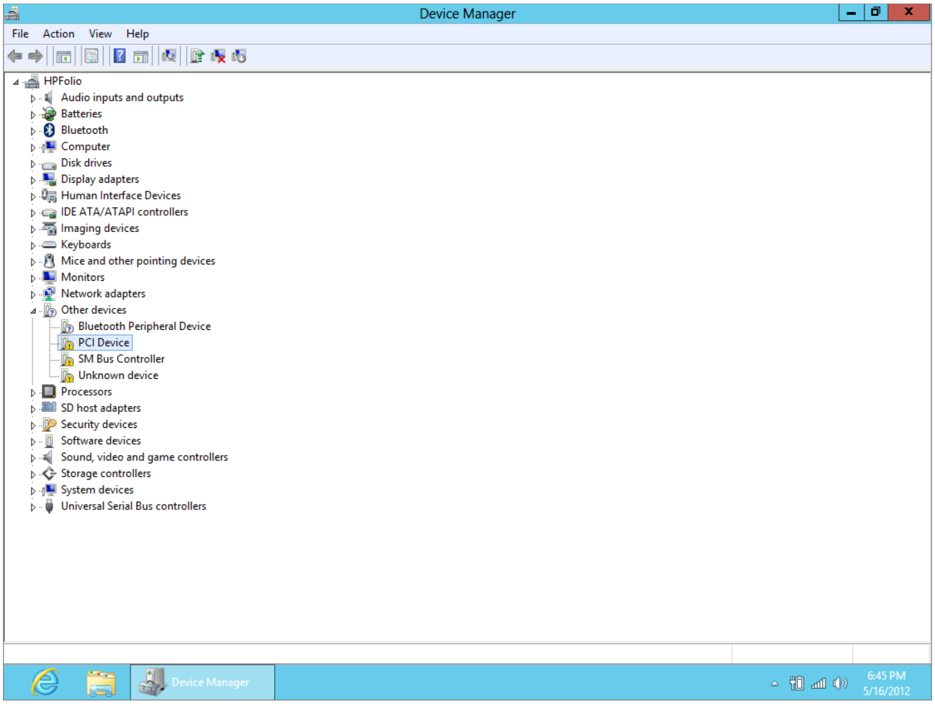
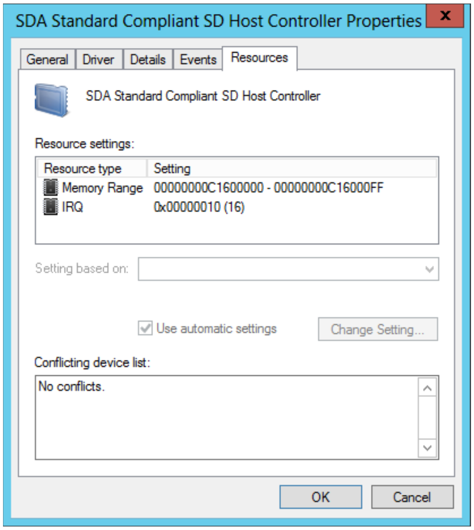

Device Manager
File
Action
View
Help
HPFolio
Audio inputs and outputs
Batteries
Bluetooth
Computer
Disk drives
Display adapters
Human Interface Devices
IDE ATA/ATAPI controllers
Imaging devices
Keyboards
Mice and other pointing devices
Monitors
Network adapters
Other devices
Bluetooth Peripheral Device
PCI Device
SM Bus Controller
Unknown device
Processors
SD host adapters
Security devices
Software devices
Sound, video and game controllers
Storage controllers
System devices
Universal Serial Bus controllers
Device Manager
6:45 PM
5/16/2012

FIGURE 48.4

The Resources tab


SDA Standard Compliant SD Host Controller Properties

SDA Standard Compliant SD Host Controller

Resource settings:

Resource type	Setting
Memory Range	00000000C1600000 - 00000000C16000FF
IRQ	0x00000010 (16)

Setting based on:

☑ Use automatic settings

Conflicting device list:

No conflicts.

Dealing with Error Messages

Error messages come in all forms, from simple warnings to the *stop errors* and "the blue screen of death," which causes the computer to stop dead in its tracks. If you were a user of Windows 7, you more than likely saw a decrease in the number of blue screen events. In Windows 8, that same pattern will more than likely follow as Windows 8 seems to be a stable operating system.

The more serious errors are often accompanied by one or more of the following pieces of information:

- **An error number:** An error number will often be a hexadecimal number in the format 0x00000*xxx* where the *xxx* could be any numbers in the message.
- **Symbolic error name:** Symbolic error names are usually shown in all uppercase with underlines between words, such as PAGE_FAULT_IN_NONPAGED_AREA.
- **Driver details:** If a device driver caused the problem, you might see a filename with a `.sys` extension in the error message.
- **Troubleshooting info:** Some errors will have their own built-in troubleshooting advice, or a Help button. Use that information to learn more about what went wrong.

Whenever you get an error message about a problem that you can't solve just by reading the advice presented on the screen, go to `http://support.microsoft.com` and search for the error number, or the symbolic error name, the driver name, or some combination of words in the text or troubleshooting of the error message.

If searching Microsoft's support site doesn't do the trick, consider searching the entire Internet using Google or Bing. You never know — someone out there may have had the same problem and posted the solution somewhere on the Internet. When using a search engine, provide as much detail as possible to get the best results for your problem.

TIP

Odd as it might seem, a Google search will often turn up pages on Microsoft's own support site that can be difficult to find when searching at the Microsoft site. You can include "site:support.microsoft.com" in the search criteria in Google to help narrow down your search results to the Microsoft Support site.

Performing a Clean Boot

The biggest problem with hardware errors is that even a tiny error can have seemingly catastrophic results, such as suddenly shutting down the system and making it difficult to get the system started again. Clean booting can also help with software problems that prevent the computer from starting normally or cause frequent errors.

Not for the technologically challenged, this procedure is best left to more experienced users who can use it to diagnose the source of a problem that's preventing the computer from starting normally. The procedure for performing a clean boot is as follows:

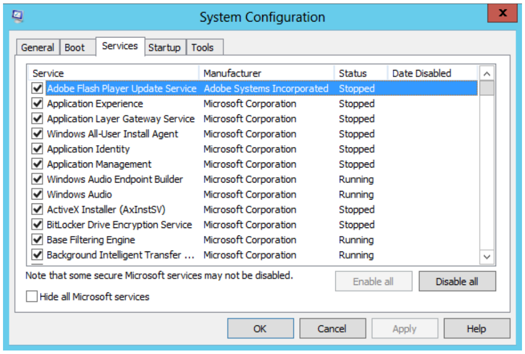
NOTE

A clean boot is not the same as a clean install. During a clean boot, you may temporarily lose some normal functionality. But once you perform a normal startup, you should regain access to all your programs and documents, and full functionality.

1. Close all open programs and save any work in progress.
2. At the Windows desktop, press Windows+X, click Run, and enter **msconfig**.
3. The System Configuration tool opens, as shown in Figure 48.5.
4. On the General tab, choose Selective Startup and make sure the Load Startup Items check box is cleared.
5. Click the Services tab.
6. Select Hide All Microsoft Services and click the Disable All button.
7. Click OK.
8. Click the Restart button.

FIGURE 48.5

The Services tab



Service	Manufacturer	Status	Date Disabled
☑ Adobe Flash Player Update Service	Adobe Systems Incorporated	Stopped	
☑ Application Experience	Microsoft Corporation	Stopped	
☑ Application Layer Gateway Service	Microsoft Corporation	Stopped	
☑ Windows All-User Install Agent	Microsoft Corporation	Stopped	
☑ Application Identity	Microsoft Corporation	Stopped	
☑ Application Management	Microsoft Corporation	Stopped	
☑ Windows Audio Endpoint Builder	Microsoft Corporation	Running	
☑ Windows Audio	Microsoft Corporation	Running	
☑ ActiveX Installer (AxInstSV)	Microsoft Corporation	Stopped	
☑ BitLocker Drive Encryption Service	Microsoft Corporation	Stopped	
☑ Base Filtering Engine	Microsoft Corporation	Running	
☑ Background Intelligent Transfer …	Microsoft Corporation	Running	

Note that some secure Microsoft services may not be disabled.

☐ Hide all Microsoft services

To return to normal startup after diagnosis, open the System Configuration tool. On the Services tab, click Enable All. On the General tab, choose Normal Startup and click OK.

Using the System Recovery Options

For more severe problems that require repairing an existing Windows 8 installation, troubleshooting startup issues, performing system and complete PC restoration, using Windows Memory Diagnostic Tool, or getting to a command prompt, you'll need to use the System Recovery Options. This method should only be used by experienced users who can perform such tasks from a command prompt.

To boot from the Windows disc, first make sure that the drive is enabled as a boot device in the BIOS with a higher priority than any hard drives. Insert the Windows disc into the drive. Restart the computer and follow these steps:

1. During the POST, watch for the Press Any Key To Boot From CD Or DVD prompt, and tap a key.
2. After all files load from the disc, click the Next button on the page that is prompting for language, currency, and keyboard type.
3. On the next page, click the Repair Your Computer link near the bottom of the page.
4. Windows opens the System Recovery Options dialog box, which looks for an existing installation of Windows 8. If your system requires special hard drive controller drivers, you can click the Load Drivers button so your installation of Windows 8 can be located. If you see your version of Windows 8 in the list box, select it and click the Next button.
5. The next window shows all of your options for recovery.

The System Recovery Options window provides different troubleshooting tools based on your set of circumstances:

- **Startup Repair:** Use this option if your system won't start up. This could be for any number of reasons, including a bad or misconfigured driver, an application that attempts to start at startup but causes the system to hang, or a faulty piece of hardware.
- **System Restore:** System Restore restores back to a designated restore point. By default, Windows is making restore points of your computer that store the state of your system. You'll be able to choose a restore point for your system from a previous day when you knew your system was performing correctly. The System Restore option doesn't alter any of your personal data or documents.
- **System Image Recovery:** For this feature to work, you need to have done a backup in the past. Windows searches hard drives and DVDs for valid backups to restore from. See Chapter 31 for information on backing up your system.
- **Windows Memory Diagnostic:** Some of the issues you may be experiencing may be the result of memory problems. Windows Memory Diagnostic Tool performs tests against the RAM in your system to see if there are any problems. For this tool to run, click the link, which will prompt you to restart your computer now and check for problems or to check for problems the next time you restart.
- **Command Prompt:** The Command Prompt option is for experienced users who need to access the file system and run commands specific to Windows 8. Choose this option only if you're sure you need it, and be careful when using the Command Prompt.

When you're finished using the System Recovery Options, you can click either Shut Down or Restart to exit. For additional information on System Recovery Options, use Help And Support and search on "System Recovery Options."

Troubleshooting Performance Problems

This section covers basic troubleshooting in terms of using Task Manager and Control Panel tools to monitor and troubleshoot performance. Keep in mind that hardware and software go hand in hand, so performance problems can be caused by either one. For example, if a device is malfunctioning or improperly configured, it can lead to performance problems. Likewise, having too many programs running at one time can eat up valuable memory and processor time, also foiling performance. So, don't assume that performance problems are always caused by hardware or software — the problem could well be one, the other, or both.

If your CPU Usage chart consistently runs at a high percentage in Task Manager, you may be running two or more firewalls. Most likely, you'll need to disable and remove any third-party firewalls, or disable the built-in Windows Firewall.

Also, scan your system for viruses, adware, and other malware, and remove all that you can find to eliminate their resource consumption.

If neither of the previous suggestions fixes your problem, you may need to see if an individual process is keeping your system overly busy. To do this, use one of these methods to start Task Manager:

- With Windows running and while logged on to the computer, press Ctrl+Alt+Del and click Start Task Manager.
- Press Windows+X, click Run, and type **taskmgr** to locate and start Task Manager.
- Right-click the taskbar and click Start Task Manager.

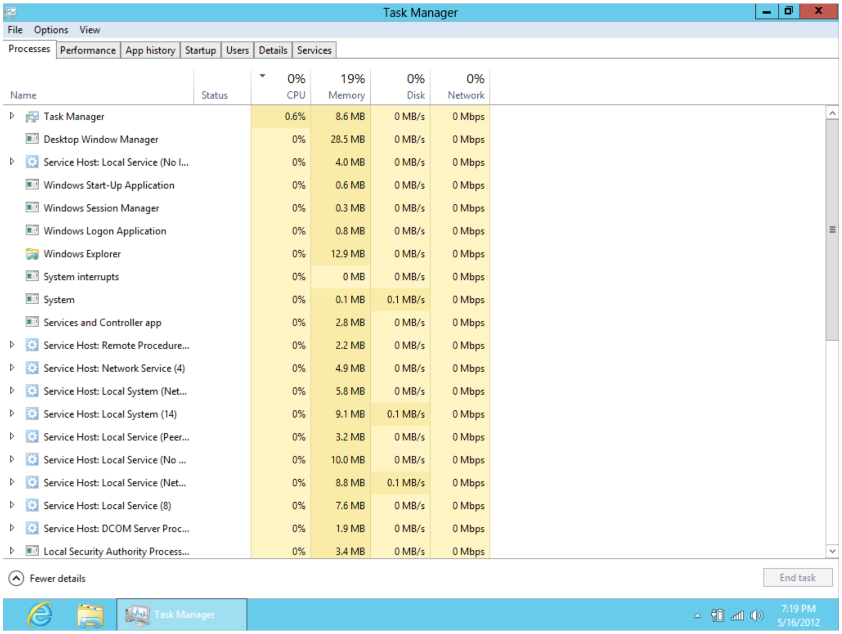
Once you're in Task Manager, click More Details, and click the Processes tab. Next, sort the CPU column, as shown in Figure 48.6. Just click the CPU column to sort by CPU utilization.

TIP

If a task is spiking CPU utilization but not staying at a consistently high rate, first identify the processes by sorting by CPU. Then, when you've determined which processes are using the most CPU time, sort by process name to watch how those processes are using the CPU.

FIGURE 48.6

Task Manager sorting the processes based on CPU percentage



Name	Status	0% CPU	19% Memory	0% Disk	0% Network
Task Manager		0.6%	8.6 MB	0 MB/s	0 Mbps
Desktop Window Manager		0%	28.5 MB	0 MB/s	0 Mbps
Service Host: Local Service (No l...		0%	4.0 MB	0 MB/s	0 Mbps
Windows Start-Up Application		0%	0.6 MB	0 MB/s	0 Mbps
Windows Session Manager		0%	0.3 MB	0 MB/s	0 Mbps
Windows Logon Application		0%	0.8 MB	0 MB/s	0 Mbps
Windows Explorer		0%	12.9 MB	0 MB/s	0 Mbps
System interrupts		0%	0 MB	0 MB/s	0 Mbps
System		0%	0.1 MB	0.1 MB/s	0 Mbps
Services and Controller app		0%	2.8 MB	0 MB/s	0 Mbps
Service Host: Remote Procedure...		0%	2.2 MB	0 MB/s	0 Mbps
Service Host: Network Service (4)		0%	4.9 MB	0 MB/s	0 Mbps
Service Host: Local System (Net...		0%	5.8 MB	0 MB/s	0 Mbps
Service Host: Local System (14)		0%	9.1 MB	0.1 MB/s	0 Mbps
Service Host: Local Service (Peer...		0%	3.2 MB	0 MB/s	0 Mbps
Service Host: Local Service (No ...		0%	10.0 MB	0 MB/s	0 Mbps
Service Host: Local Service (Net...		0%	8.8 MB	0.1 MB/s	0 Mbps
Service Host: Local Service (8)		0%	7.6 MB	0 MB/s	0 Mbps
Service Host: DCOM Server Proc...		0%	1.9 MB	0 MB/s	0 Mbps
Local Security Authority Process...		0%	3.4 MB	0 MB/s	0 Mbps

You should be able to identify the process that is using the majority of your CPU. You have a couple of options at this point:

- Use the name of the process under the Name column to search the Internet to see if the process is a valid file or a potential virus. If it is a virus of some form, you'll need to update your virus definitions and rerun your virus scan. If it does not appear to be a virus, you'll need to contact the software vendor for help troubleshooting the problem.
- Short term, you can right-click the process and choose End Task. Sometimes applications run into problems or situations the developer never imagined and the process gets stuck in a loop, which taxes the CPU. Restarting the application resets the process, and with any luck you will avoid the circumstances that put the application in a loop. In addition Task Manager, Windows 8 includes several other utilities located in the Performance Information And Tools Control Panel applet (see Chapter 47).

Wrap-Up

Many thousands of hardware devices are available that you can use with Windows, and no single rule applies to troubleshooting all of them. So you'll likely have to consider all of your resources. Be sure to check the manual that came with the hardware device first. If that doesn't work, the device manufacturer's website will likely be your next best bet.

Part X

Networking and Sharing

IN THIS PART

Chapter 49
Creating a Home Network

Chapter 50
Sharing Resources on a Network

Chapter 51
Using Shared Resources

Chapter 52
Troubleshooting Networks

CHAPTER

49

Creating a Home Network

IN THIS CHAPTER

- **Understanding why you create a network**
- **Creating a traditional Ethernet network**
- **Creating a wireless network**
- **Setting up a wired network**
- **Setting up a wireless network**

If you have two or more computers, you may already be using what's known as a *sneaker network*. For example, to get files from one computer to another, you copy files to a flash drive or CD. Then, you walk over to the other computer and copy the files from the disk to that computer. Wouldn't it be nice if you could just drag icons from one computer to the other without having to use a flash drive or CD?

What if you have several computers, but only one printer, one Internet connection, or one DVD burner? Wouldn't it be nice if all the computers could use that one printer, that one Internet connection, and that one burner? All of these things are possible if you connect the computers to one another in a *local area network* (LAN).

After you've purchased and installed networking hardware, you're ready to set up your network. Windows 8 includes features that remove the complexities commonly associated with network configurations.

This chapter describes how to configure Windows for different types of hardware setups. Remember that you should always follow the instructions that came with your networking hardware first. After all, those instructions are written for the exact products you've purchased.

What Is a LAN?

A *local area network* (sometimes referred to as a LAN, a *workgroup*, a *private network*, or just a *network*) is a small group of computers within a relatively small geographic area such as a campus, single building, or household that can communicate with one another and share *resources*. A resource is anything useful to the computer. For example:

- All computers in the LAN can use a single printer.
- All computers in the LAN can connect to the Internet through a single Internet connection and Internet account.
- All computers in the LAN can access shared files and folders on any other computer in the LAN.

In addition, you can move and copy files and folders among computers using exactly the same techniques you use to move and copy files among folders on a single computer. However, it's not entirely necessary to move or copy a document that you want to work on, because if a document is in a shared folder, you can open and edit it from any computer in the network. This is good because you have only one copy of the document, and you don't have to worry about having multiple, slightly different copies of the same document all over the place to confuse matters.

Planning a LAN

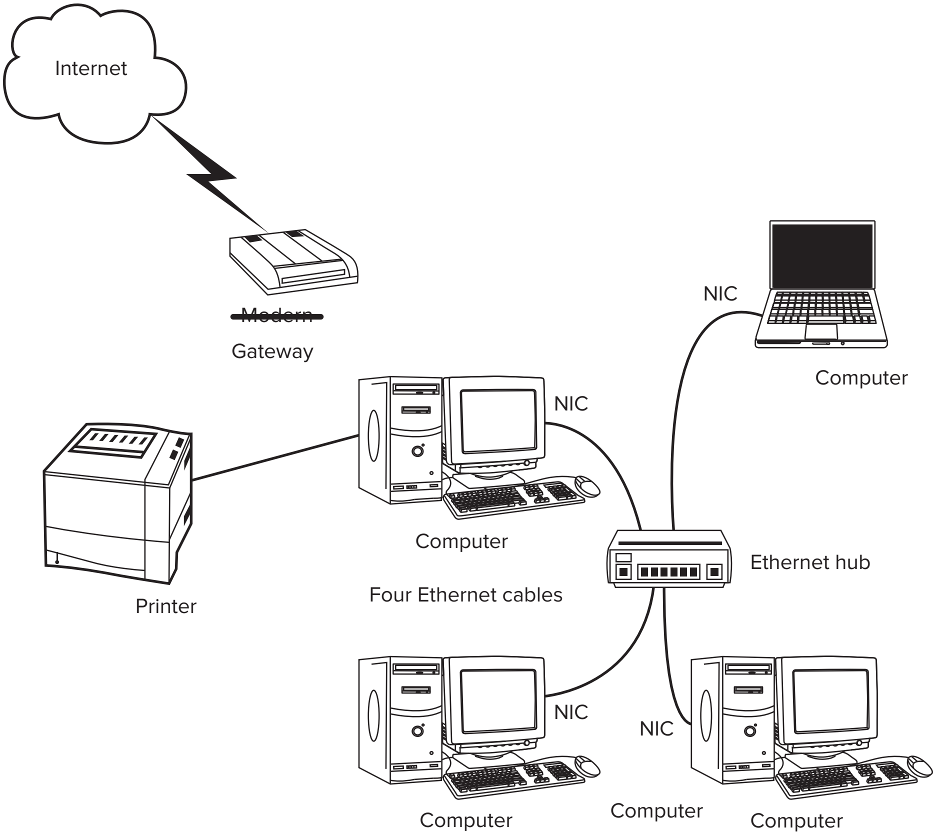
To create a LAN, you need a plan and special hardware to make that plan work. For one thing, each computer will need a device known as a *network interface card* (NIC) or *Ethernet card*. You can purchase and install those yourself. Many PCs, however, come with an Ethernet card already installed for connecting to a wired network. In that case, you'll have an RJ-45 port on the back of the computer. It looks a lot like the plug for a telephone, just a little bigger. You just plug one end of an Ethernet cable into that port, and plug the other end of the cable into a network hub or wall jack. You can also connect computers without any cables at all by using wireless networking hardware. Exactly what you need, in terms of hardware, depends on what you want to do. The rest of this chapter describes your options.

Creating a Wired LAN

If you have two or more computers to connect, and they're all in the same room and close to one another, you can use a traditional Ethernet hub and Ethernet cables to connect the computers with cables. You'll need exactly one NIC and one Ethernet cable for each computer in the LAN. Figure 49.1 shows an example of four computers connected in a traditional LAN. Notice how each computer connects to the hub only — no cables run directly from one computer to another computer.

FIGURE 49.1

Example of four computers connected in a traditional Ethernet LAN


Internet
~~Modem~~
Gateway
NIC
Computer
NIC
Computer
Printer
Four Ethernet cables
Ethernet hub
NIC
NIC
Computer
Computer
Computer

49

By the way, in Figure 49.1 a printer can be connected to any computer on the LAN. In fact, you could have several printers connected to several computers. All computers will be able to use all printers, no matter which computer that printer is (or those printers are) connected to. In addition, a printer with a network interface need not be connected to a computer at all, but rather can be connected directly to the network.

Traditional Ethernet speeds

When it comes time to purchase network interface cards, cables, and a hub, you'll need to decide on the speed you want. As with everything else in the computer industry, network speed costs money. However, in the case of networks, the cost differences are minor, whereas the speed differences are huge. The three possible speeds for Ethernet LANs are listed in Table 49.1.

TABLE 49.1 **Common Ethernet Network Component Speeds**

Name	Transfer Rate (speed)	Bits per Second	Cable
10Base-T	10 Mbps	10 million	Category 3 or better
100Base-T	100 Mbps	100 million	Category 5 or better
Gigabit Ethernet	1 Gbps	1,000 million (billion)	Category 6 or better

If it's difficult to relate the numbers to actual transfer rates, consider a dial-up modem, which tops out at about 50 Kbps. That's 50,000 bits per second. A 100Base-T network moves 100,000,000 bits per second. That's 2,000 times faster or, in other words, you only have to wait 1/2,000 as long for the same file to transfer across a 100Base-T connection. So, a file that takes 33 minutes (2,000 seconds) to transfer over a dial-up modem takes 1 second to transfer over a 100Base-T network.

TIP

10 Gbps networks are available that operate at 10 times the speed of a 1 Gbps network. However, 10 Gbps network hardware is still generally much more expensive than 1 Gbps hardware, making it a less likely candidate for a home or small office network. For that reason, we don't cover 10 Gbps networks in this chapter.

The slowest component rules

When purchasing hardware, it's important to understand that the slowest component always rules. For example, if you get Gigabit Ethernet cards, but connect them to a 100Base-T hub, the LAN will run at 100 Mbps. The faster Gigabit NICs can't force the slower hub to move any faster.

It makes sense if you envision the electrons going through the wire as cars on a freeway. Let's say lots of cars are zooming down a 10-lane freeway, but there's some road construction where the freeway narrows to one lane. Cars are going to pile up behind that point because the one-lane portion is slowing things down. Where the one lane reopens back to 10 lanes, cars will still be trickling out of the *bottleneck* — the single lane — one at a time. The 10 lanes at the other side of the bottleneck can't "suck the cars through" the bottleneck any faster than one car at a time.

Likewise, if your computers are connected together with a Gigabit LAN, but all share a single 512 Kbps broadband connection to the Internet, your Internet connection is still 512 Kbps. Your fast LAN can't force the data from your ISP to get to your computer any faster than 512 Kbps. Furthermore, if two people are using the 512 Kbps broadband connection at the same time, they have to share the available bandwidth, meaning that each user might get only 256 Kbps. But, if only one person is online, she gets the full 512 Kbps because she's not sharing bandwidth with anyone else.

NOTE

If you have only two computers to connect, and each has an Ethernet card, you don't really need a hub. Instead, you can connect the two computers directly using an Ethernet *crossover cable*. However, this won't enable the computers to connect to anything other than one another.

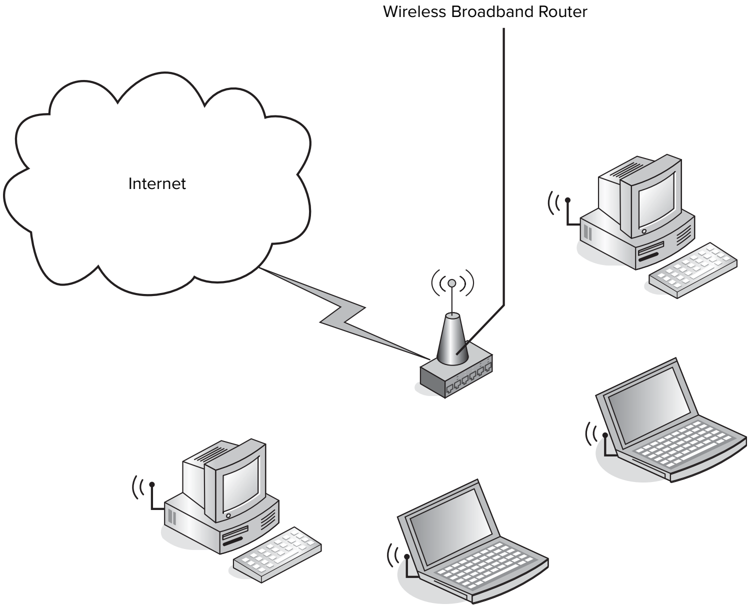
Creating a Wireless LAN

Wireless networking reigns supreme when it comes to convenience and ease of use. As the name implies, with wireless networks you don't have to run any cables. Plus, no computer is tied down to any one cable. For example, you can use your notebook computer in any room in the house, or even out on the patio, and still have Internet access without being tied to a cable.

To set up a wireless LAN, you need a wireless NIC for each computer. To set up an *ad-hoc* wireless network, that's all you need. The computers can communicate with each other, so long as they're within range of one another. If you want Internet connectivity for all of the computers in a wireless LAN, you'll need some kind of access point that acts as a central location for all the computers and also provides an Internet connection. Typically, that device would be a wireless broadband router, as illustrated in Figure 49.2.

FIGURE 49.2

Example of four computers connected in a wireless LAN



Wireless broadband router

The big advantage of wireless networking is, of course, the lack of cables. This is especially handy on a notebook computer or handheld device because the device isn't tethered to one location by a cable. Granted, you can't stray too far from the wireless access point (100 to 150 feet or so), but that will probably be sufficient in most cases.

Also, many universities and retail businesses offer public Internet access from any computer that has an 802.11b, 802.11g, or 802.11n wireless network interface. So, if you create your home wireless network using either of those standards, you'll also be able to use public Wi-Fi Internet access where it's available.

TIP

The only disadvantages to wireless networking, as compared to wired networks, are speed and reliability. 802.11g wireless networks run at a theoretical max of 54 Mbps. It's not as fast as the 100 Mbps or 1 Gbps speeds of traditional Ethernet cables, but still more than fast enough for typical networking tasks. Reliability isn't a problem with the technology, per se. Rather, it has to do with the rare "blind spot" here and there where the computer just won't connect to the network because the signal is blocked or it's out of range.

Wireless networks are built around four different standards. 802.11n is the newest, although as of this writing it is still in draft and not technically a standard. Table 49.2 summarizes the main differences between the four standards. The Public Access column refers to Internet Wi-Fi hotspots such as those found at some airports, hotels, and other places.

TABLE 49.2 **Wireless Networking Standards and Speeds**

Standard	Speed	Range	Public Access
802.11b	11 Mbps	100–150 feet	Yes
802.11a	54 Mbps	25–75 feet	No
802.11g	54 Mbps	100–150 feet	Yes
802.11n	600 Mbps	150–300 feet	Yes

In most cases, when setting up your network you're really setting up two networks. The first network involves the computer-to-computer communication. This includes the wireless setup or a wired setup discussed earlier in the chapter. The second network is the Internet. Connecting to the Internet involves some form of an ISP. Today, two of the most popular methods are either a standard dial-up modem connection or (more likely) a broadband connection. If you're sharing an Internet connection, one device in your network will have physical access to the Internet and the other computers will share the connection. The one device that actually sees the Internet can be a computer, or you can purchase an inexpensive device that connects to the Internet called a broadband router.

Other useful wireless goodies

If you already have a wired network with Internet connectivity and just want to add some wireless computers to that network, you don't need a Wireless Broadband Router. Instead, you need a *Wireless Access Point* (WAP). First you'll need to configure the WAP, as per the manufacturer's instructions, by connecting it directly to one of the computers in your wired network. Then you can disconnect the WAP from the computer and connect it directly to the hub for your wireless network. The wireless computer can use the same shared Internet connection that the wired network uses.

Getting a wireless network to cover a whole house can be a challenge, especially if you have two or more floors. If you want to extend Wi-Fi to the entire house, you may need to use one or more *wireless range expanders* to extend the reach of the network. Putting one near the staircase is a good idea when you need to reach upstairs or downstairs. You can also use multiple access points to achieve the same results.

A Wi-Fi finder can also be helpful. It's a device that's small enough to fit on a keychain and it measures the strength of a wireless network signal at wherever you're standing. It can help you determine where the edge of a signal is, which is a good place to put a range expander to get more coverage.

Acquiring and Installing Network Hardware

Almost all PCs manufactured in the last several years have networking capability built in. So, it's unlikely that you'll need to buy NICs for your devices. If you need one for a desktop PC and you are not comfortable working inside the computer, just buy a USB network adapter. If you're not sure, check with your local PC dealer.

If you're new to all of this and just want to see what some of this stuff looks like, here are some websites you can visit. They're all network hardware manufacturers, not retailers:

- **D-Link:** `www.d-link.com`
- **Gigafast:** `www.gigafast.com`
- **Cisco:** `http://home.cisco.com`
- **Netgear:** `www.netgear.com`
- **SMC Networks:** `www.smc.com`
- **TrendNET:** `www.trendnet.com`

In terms of actually purchasing the products, you can find these products at any store that sells computer supplies, including many of the large office supply chains such as Staples and OfficeMax. Of course, you can buy the devices online at any website that sells computer stuff. Shopping jaunts include websites such as `www.amazon.com`, `www.cdw.com`, `www.cyberguys.com`, `www.officemax.com`, `www.staples.com`, `www.tigerdirect.com`, and `www.walmart.com`, just to name a few.

After you've acquired the hardware, you need to install it. We can't help you much there either. You'll have to follow the manufacturer's instructions on that one because there is no one-rule-fits-all when it comes to installing hardware. As a general rule of thumb, you'll probably want to:

- Get the hub or router (if any) set up first.
- Install the network interface cards second.
- Connect all the cables last.

Once all the hardware is connected and installed, you're ready to set up the network. That part isn't so complicated because Windows does a great job of searching out networks. You work through that next.

After the Hardware Setup

A couple of steps are involved in actually setting up the networking hardware. First, make sure that the hardware you purchased is installed based on the manufacturer's instructions. This may include plugging in the device, then connecting the device to the Internet, and finally plugging in the other computers to the device. When this is complete, you can run the Set Up A Network Wizard to let Windows finish the process.

CAUTION

Read and follow the network hardware manufacturer's instructions carefully before you configure your network. If there's any conflict between what they say and what's stated in this chapter, do as the manufacturer's instructions say. Failure to do so could lead to many hours of hair-pulling frustration!

Close any open programs and documents before you start configuring your network. The type of network hardware you have set up will determine what configuration you'll need to use. Here's where to look, depending on your network configuration:

- If you have an Ethernet network, and you are using a modem inside of, or connected to, one computer in the network, you can use Internet Connection Sharing (ICS) to share a single Internet account. Because this scenario isn't very common anymore, we don't cover it in this book. Perform a search at your favorite search site for Internet Connection Sharing for details.
- If you have a router or residential gateway that all computers in your network connect to, each computer will have its own direct access to the Internet via the router. See the section "Setting Up a Wired Network."

- If you have a wireless network, see the section titled "Setting Up a Wireless Network" later in this chapter.
- If you want to set up a Bluetooth personal area network, see Chapter 45, "Using Wireless Bluetooth Devices."

NOTE

In the past, the term *residential gateway* typically referred to networking devices that were relatively low cost networking devices that combined most or all of the devices needed to connect a LAN to a wide area network (WAN) such as the Internet. Today, the term is used to describe essentially the same type of device, but today's gateways offer much more capability than older devices. An example of a residential gateway is a cable modem that includes a hub and provides everything you need to connect your LAN to a cable-based Internet service. Another example is a wireless access point that includes a hub and integrated DSL modem. For the purposes of this chapter, we use the term *gateway* to refer to the device that connects your LAN to your Internet service. If you're not sure what you need to connect your LAN to the Internet, check with your local computer store.

Be sure to turn off all computers before you install the networking hardware (unless you're installing a USB adapter). Then, install all of the networking hardware and turn on all of the computers. Chances are, Windows 8 will detect the hardware and start setting things up automatically. If you see any prompts asking what type of network you're installing, make sure you specify that it's a *private* network (not a public network). When asked about file sharing, make sure you make choices that allow for file and printer sharing among computers in the private network.

With those buzzwords and tips in mind, let's move on to the specifics of things to do after you get all the network hardware in place and all the computers turned on.

Setting Up a Wired Network

With a wired network, your first step after setting up the hardware and connecting the PCs to the hub (or gateway device that contains the hub) will usually be to get online from one computer. You'll need to refer to instructions that came with your router, as well as your ISP's instructions, to do that. In a typical scenario, however, you configure the router or gateway to automatically assign an IP address, default gateway address, and DNS addresses to your computers. Then, you configure your devices for automatic address assignment. The computers should then receive their addresses (generally no need to reboot them) and have access to the network and the Internet.

TIP

While the computers on the network should have access to the Internet at this point, they won't necessarily have access to one another's resources such as files and printers. Instead, you need to configure sharing. See Chapter 50, "Sharing Resources on a Network," to learn how to set up your computers to share resources.

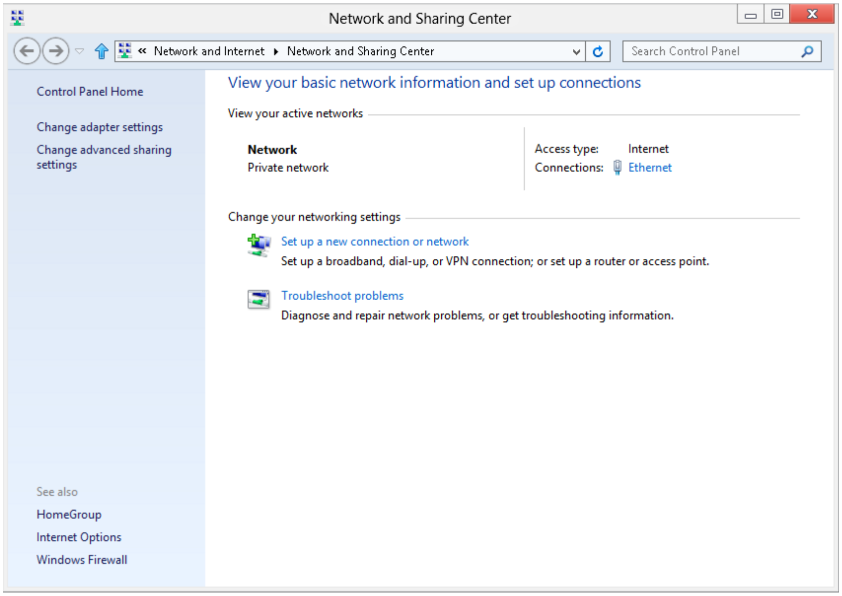
After connecting and configuring your PCs, Windows attempts to find the network for you. To see where you stand, follow these steps:

1. Open Control Panel.
2. If Control Panel opens in Category view, click the Network and Internet icon.
3. Open the View Network Status And Tasks link below Network And Sharing Center.

   As shown in Figure 49.3, the system is connected to a local network and to the Internet.
4. If the connection doesn't show Internet as the access type, check your gateway configuration and make sure your settings are correct. If you still have problems, see Chapter 52, "Troubleshooting Networks," for tips on how to verify and test your configuration.

FIGURE 49.3

A computer connected to the network and also connected to the Internet



Network and Sharing Center
« Network and Internet ▸ Network and Sharing Center
Search Control Panel
Control Panel Home
Change adapter settings
Change advanced sharing settings
See also
HomeGroup
Internet Options
Windows Firewall

View your basic network information and set up connections

View your active networks

Network
Private network

Access type: Internet
Connections: Ethernet

Change your networking settings

Set up a new connection or network
Set up a broadband, dial-up, or VPN connection; or set up a router or access point.

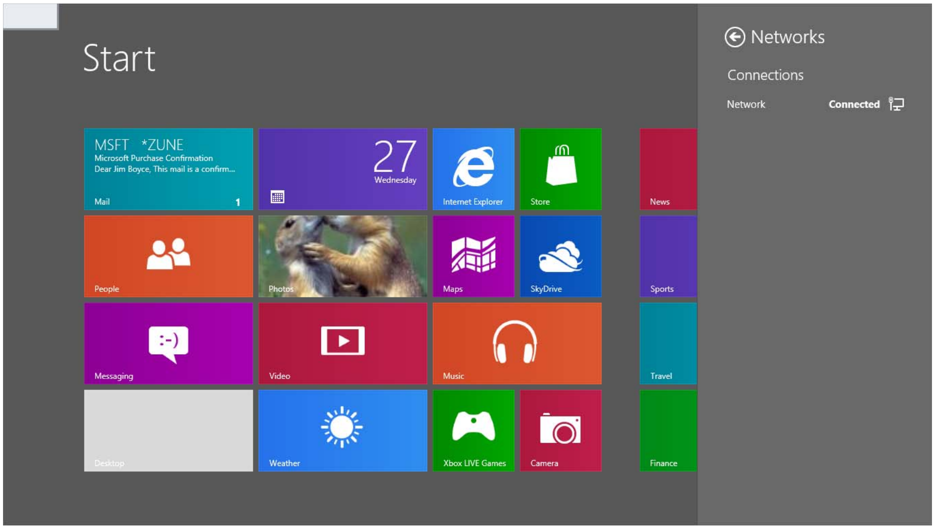
Troubleshoot problems
Diagnose and repair network problems, or get troubleshooting information.

In Figure 49.3, Windows sees the local network and also sees the Internet connection from the local network. If your networking hardware is configured correctly, Windows sees the network and sets it up for you appropriately.

If you're working from the Start screen, you can also see your connection status, although with less detail. Open the Charms Bar and click Settings; then click Network. Figure 49.4 shows an example.

FIGURE 49.4

View the network status from the Charms Bar.


Start
MSFT *ZUNE
Microsoft Purchase Confirmation
Dear Jim Boyce, This mail is a confirm...
Mail 1
27
Wednesday
Internet Explorer
Store
News
People
Photos
Maps
SkyDrive
Sports
Messaging
Video
Music
Travel
Desktop
Weather
Xbox LIVE Games
Camera
Finance
Networks
Connections
Network Connected

If your network is configured correctly for the first computer, try configuring your next system on the network using the steps outlined earlier.

If you have wireless devices that you want to connect to the network, follow the instructions in the next section.

Setting Up a Wireless Network

There's something about the term "wireless" that makes it seem as though it must be easier than "wired." In truth, wireless networking is quite a bit more complicated terminology-wise. There are lots of buzzwords and acronyms everyone assumes that you already know. So, before we get into this topic, let's get all of that out of the way.

The 802.11 standard

The Institute of Electrical and Electronics Engineers, Inc., abbreviated IEEE and pronounced *EYE-triple-E*, is an organization of some 360,000 electrical engineers who develop many of the standards that PC products use to interact with one another. The IEEE isn't big on giving fancy names to things. They prefer numbers (which somehow seems fitting). Names often get tacked on later. For example, what is now called Ethernet is actually IEEE 802.3. What Apple calls FireWire and Sony calls iLink is actually IEEE 1394.

NOTE

The home page for IEEE is at `www.ieee.net`.

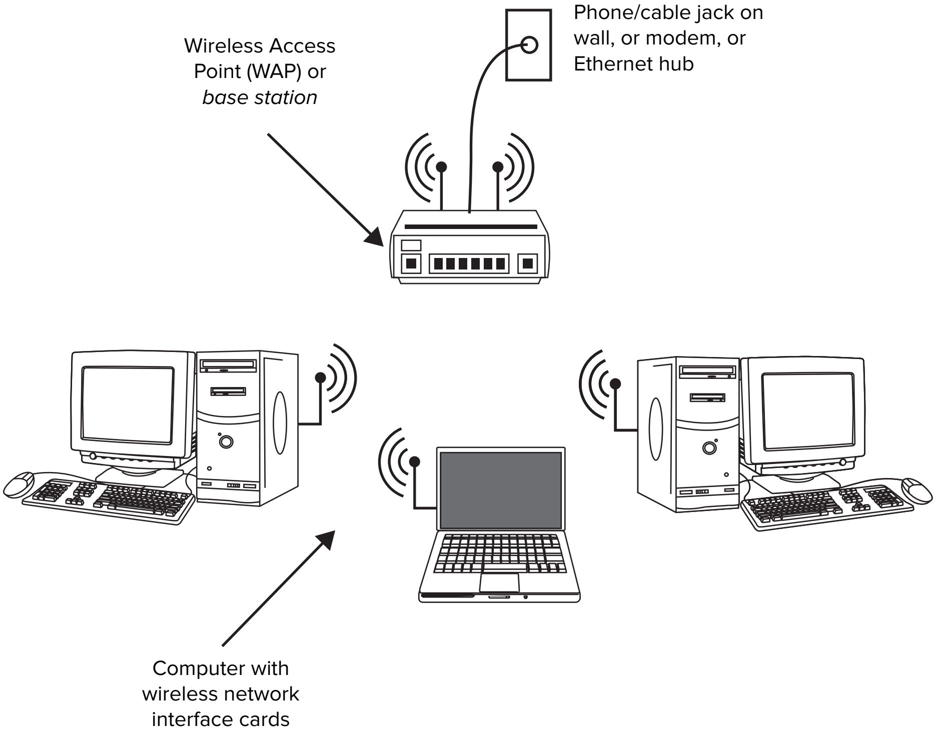
IEEE created the 802.11 standard for most wireless networking today. Several revisions to the original specification have been proposed, with 802.11a, 802.11b, 802.11g, and 802.11n being the four that actually have made it to market at the time of this writing. Most likely, you'll be using 802.11g or 802.11n because they are the standard to which most of the recently released wireless networking products adhere.

Access point, SSID, WEP, and WPA

Wireless networking requires some kind of *wireless access point*, also called a *base station*. The base station is the central unit with which all computers in the network communicate. It's the same idea as a hub in Ethernet networking. It's just that there are no wires connecting computers to the access point. Instead, each computer has a wireless network interface card (NIC), as illustrated in Figure 49.5.

FIGURE 49.5

Wireless communications all go through an access point or base station.


Wireless Access Point (WAP) or *base station*
Phone/cable jack on wall, or modem, or Ethernet hub
Computer with wireless network interface cards

The access point in a wireless network plays the same role as the hub in a wired network in that all traffic goes to the access point first and is passed on to the appropriate destination from there. The problem is that, with wireless networks, you have radio waves, which aren't confined to the inside of a wire. Radio waves go all over the place, just as when you throw a rock in the water and make waves that spread out in a circle.

The radio waves can be a problem when you have multiple wireless networks that are close to each other. For example, let's say that a company has several departments, and each department has its own, separate wireless network. If the departments are fairly close to each other in the same building, it's possible that network messages from one department might get picked up by another department's wireless access point, which could present a security risk.

To avoid that problem, you need some means of discriminating among multiple wireless access points. For example, you need some means of setting rules such as "these six computers in the marketing department communicate only with each other through access point X, while these 12 computers in Accounting communicate with each other only through access point Z." The way you do that in today's wireless networking is through things such as network names, SSID, WEP, and WPA.

About SSIDs

Every wireless network has a unique name called a *service set identifier* (SSID), or just a *wireless network name* for simplicity. The access point in the network holds the SSID and broadcasts it out at regular intervals. When you start a wireless network computer, it scans the airwaves for SSID. When you set up a wireless network access point (by reading the manufacturer's instructions, of course), you assign an SSID to your access point.

TIP

You can configure a WAP to not broadcast its SSID, which adds an extra measure of security for your wireless network. Rather than search for available wireless networks, you'll have to manually specify the network SSID when setting up the wireless connection on your device.

The name you assign doesn't have to be anything fancy, but it should be unique enough to avoid conflict with any close neighbors who also have wireless networks. The SSID doesn't provide any real network security. After all, the access point broadcasts the SSID out some distance from the access point. So if some hackers happened to be driving by with a notebook computer, they might be able to pick up the name of your wireless LAN from the car. Then they could join your network and receive data being sent by computers in your network. WEP and WPA are encryption tools designed to avoid such intrusions.

About WEP and WPA

Open System Wired Equivalent Protocol (WEP) is a wireless security protocol that protects wireless network data from falling into the wrong hands. Before any information leaves your computer, it's encrypted using a WEP key. The key is a simple string of characters that you can generate automatically, or have Windows generate for you.

Wi-Fi Protected Access (WPA) is a newer and stronger encryption system that supports modern EAP security devices such as smart cards, certificates, token cards, one-time passwords, and biometric devices. WPA2 adds support for the AES encryption algorithm, which provides better security than WPA. If your wireless devices support WPA2, you should use that rather than WPA.

Installing the wireless networking hardware

The most critical step in setting up a wireless network is installing the hardware devices. It's imperative that you follow the instructions that came with the device to the letter because guessing almost never works. In particular, it's important to note that even devices that plug into a hot-pluggable port such as USB devices or a PC Card need you to install drives *before* you install the hardware device. That's unusual for hot-pluggable devices, and most people just assume that they can plug in the device and go. But it just doesn't work that way with wireless networking devices.

Connecting to available networks

The main trick to wireless networking is setting up the access point. Typically, you do this by configuring one computer with a static IP address and connecting it to the access point with a wired connection. With both the computer and WAP on the same IP subnet, you can then open a browser and connect to the WAP's web-based configuration pages. Then, you configure the access point from that computer. You give the network its name (SSID) and choose your encryption method. The access point then begins transmitting that name at regular intervals.

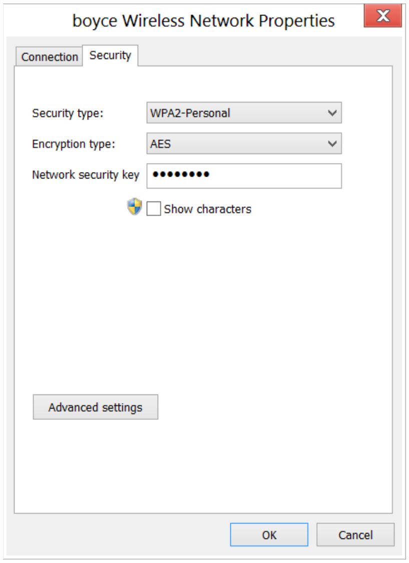
On any computer that's to join the wireless LAN, you install a wireless network adapter. On a notebook computer, it's likely that a card resides internal to the system. On a desktop computer, you can install an internal wireless network adapter, or connect one to a USB port.

Once you've installed the network adapter, you're ready to connect to the wireless network. If you are working from the Windows 8 interface, open the Charms Bar and click or tap Settings. Then, click or tap the Network icon to view a list of available networks. Click or tap the connection you want to use and then click or tap Connect. If the connection requires that you enter a passphrase, type the passphrase and click or tap Next to connect to the network.

If you need to retype the network security key or change other wireless properties, open the Charms Bar and click or tap Settings and then the network icon. Right-click or tap and hold the connection you want to change and choose View Connection Properties to show the Security tab of the Wireless Network Properties dialog box shown in Figure 49.6. Figure 49.7 shows the Connection tab for the connection.

FIGURE 49.6

Wireless Network Properties allow you to configure the connection.



boyce Wireless Network Properties

Connection
Security

Security type: WPA2-Personal

Encryption type: AES

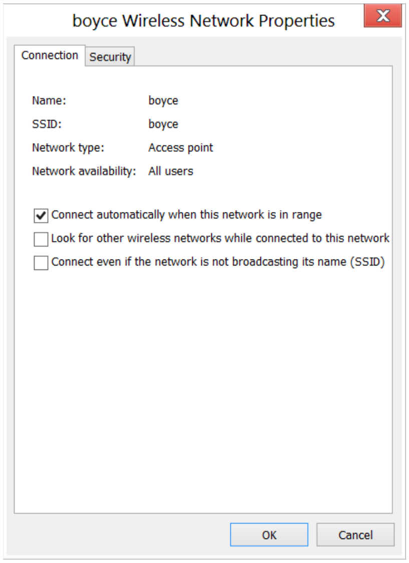
Network security key ••••••••

☐ Show characters

Advanced settings
OK
Cancel

FIGURE 49.7

Connection tab for a wireless network connection



boyce Wireless Network Properties

Connection
Security

Name: boyce

SSID: boyce

Network type: Access point

Network availability: All users

☑ Connect automatically when this network is in range

☐ Look for other wireless networks while connected to this network

☐ Connect even if the network is not broadcasting its name (SSID)

OK
Cancel

The Notification icon

Windows 8 can include your network connectivity information within the Notification area. The icon for a wired connection is a computer with a network cable beside it. The icon for a wireless connection is a set of signal strength bars. If you don't see an icon, check to make sure that it's not just hidden by clicking the < button at the left side of the Notification area. If you still don't see the icon, click the up arrow at the left of the Notification are and select Customize. Beside the Network item, click the drop-down list under the Behaviors column and choose Show Icon And Notifications. Then, click OK.

When you've finished, you're ready to move on to Chapter 50 where you learn to share resources and use those shared resources from any computer in the network.

Wrap-Up

A local area network (LAN) consists of two or more computers that can communicate with one another through networking hardware. Multiple computers in a network can share a single Internet account, share printers, and share files and folders. Moving and copying files between networked computers is a simple matter of dragging and dropping. No fumbling around with floppies, CDs, or other removable disks is required. The main points to remember when it comes to buying network hardware are as follows:

- The first step to creating a LAN is to purchase the computer networking hardware.
- Each computer in the network needs a network interface card (NIC) installed.
- Ethernet LANs provide the fastest speeds, but require running special Ethernet cables.
- Wireless networking provides complete freedom from cables and wires.
- USB networking devices are easy to install and don't require opening the computer case.
- On a notebook computer, you can use a PC Card NIC (not to be confused with PCI card), USB NIC, or an integrated wireless network card to connect to the network.
- After you acquire your network hardware, you have to set it all up per the manufacturer's instructions. When you've finished that step, you can use the Network and Sharing Center to help configure the hardware.

CHAPTER 50

Sharing Resources on a Network

IN THIS CHAPTER

Understanding your options for sharing

Homegroups

Turning on sharing and discovery

Sharing media

Sharing printers

Sharing folders

A local area network (LAN) consists of two or more computers connected through some sort of networking hardware. In a local area network, you can use *shared resources* from other computers in much the same way as you use local resources on your own computer. In fact, the way you do things in a LAN is almost identical to the way you do things on a single computer.

For example, everything you learned about printing documents on your own computer earlier in this book works just as well for printing on a network printer. Opening a document on some other computer in a network is no different from opening a document on your own computer.

Before you can access shared resources, however, you need to share them. You have more than one method for sharing resources, and this chapter covers those methods. Before getting into the particulars of resource sharing, the following section takes a quick look at some terminology.

Some Networking Buzzwords

Networking has its own set of buzzwords. All the buzzwords you learned in earlier chapters still apply, but you have some new words to learn, as defined here:

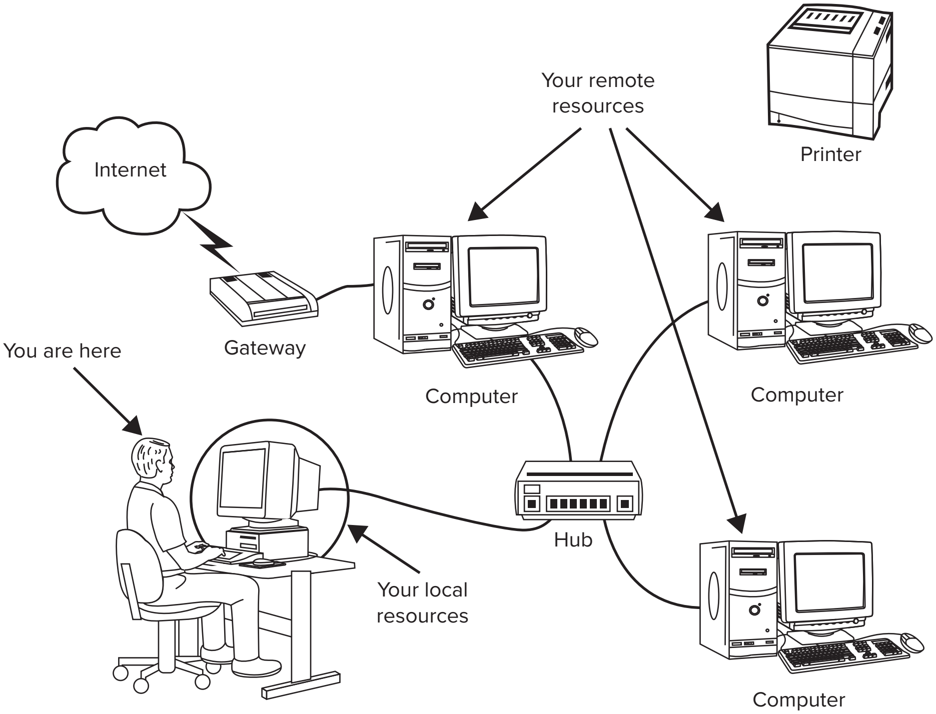
- **Resource:** Items you use on the network, including a folder, shared media, a printer, or other device.
- **Shared resource:** A resource accessible to other users within a network. A shared folder is often referred to as a *share* or *network share*.

- **Local computer:** The computer you're currently using.
- **Local resource:** A folder, printer, or other useful thing on the local computer or directly connected to the local computer by a cable. For example, if there's a printer connected to your computer by a cable, it's a local resource (or more specifically, a *local printer*).
- **Remote computer:** Any computer in the network other than the one you're currently using.
- **Remote resource:** A folder, printer, or other useful thing on some computer other than the local computer. For example, a printer connected to someone else's computer on the network is a remote resource (or more specifically, a *remote printer*).

Figure 50.1 shows an example of how the terms "local" and "remote" are always used in reference to the computer you're currently using.

FIGURE 50.1

Examples of local and remote resources, from your perspective


Your remote resources
Printer
Internet
Gateway
You are here
Computer
Computer
Hub
Your local resources
Computer

Methods for Sharing in Windows 8

Windows 8 includes three methods for sharing resources, each of which has its own advantages. The following sections explain these different methods.

See Chapter 24, "Making Music with Media Player," to learn about sharing media with Media Player.

Homegroups

Homegroups were first introduced as a feature in Windows 7 designed to simplify resource sharing and access for home networks. Homegroups are also available with Windows 8. The first Windows 7 or Windows 8 computer added to a network creates the homegroup, and then other Windows 7 or Windows 8 computers on that same network can join the homegroup. Once your computer is part of the homegroup, you have access to the resources shared by the other computers in the homegroup.

See "Windows 8 Homegroups" later in this chapter to learn how to create and join a homegroup.

When you use a homegroup for sharing, you specify which folders you want to share. You can share those folders with either read or read/write permissions with the rest of the homegroup. You can also set permissions on a per-user basis to allow one person to access a folder or file but not others.

Only Windows 7 and Windows 8 computers can participate in a homegroup. A computer running any edition of Windows 7 or Windows 8 can join a homegroup, but computers running Windows 7 Home Basic and Windows 7 Starter can only join a homegroup, not create one.

NOTE

Computers in a homegroup do not have to belong to the same workgroup.

Workgroup

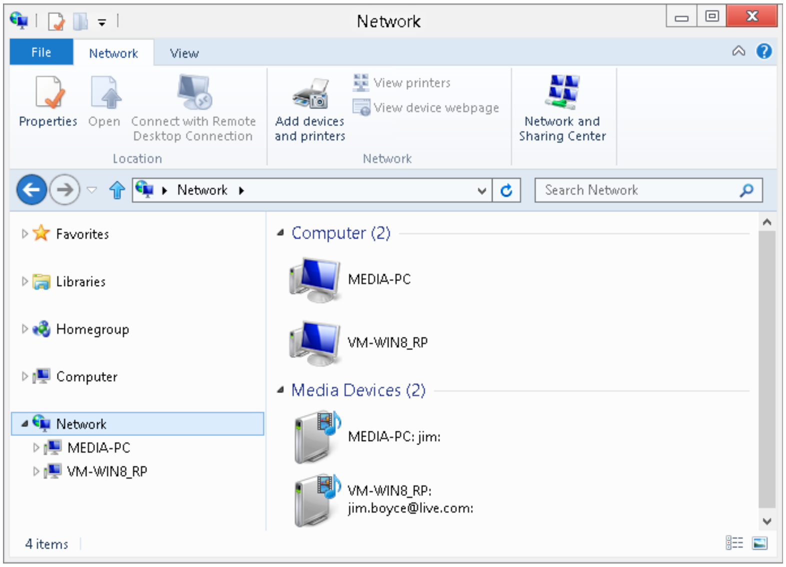
Although homegroups are a great new way to share resources in a network, only the Windows 7 or Windows 8 computers on the network can participate. Computers running other versions of Windows cannot participate in the homegroup. In these situations, you can use workgroups to share resources on the network.

A Windows PC, regardless of the version of Windows it is running, must be a member of either a workgroup or a domain (covered in the next section). A workgroup isn't a boundary that controls security. Rather, workgroups provide a means for organizing and discovering resources on the network.

The default workgroup name in Windows is, not surprisingly, Workgroup. Computers that share the same workgroup name and which reside on the same network segment appear grouped together when you browse the network. Figure 50.2 shows a workgroup.

FIGURE 50.2

Browsing a workgroup for shared resources


Network
File
Network
View
Properties
Open
Connect with Remote Desktop Connection
Location
Add devices and printers
View printers
View device webpage
Network
Network and Sharing Center
Network
Search Network
Favorites
Libraries
Homegroup
Computer
Network
MEDIA-PC
VM-WIN8_RP
Computer (2)
MEDIA-PC
VM-WIN8_RP
Media Devices (2)
MEDIA-PC: jim:
VM-WIN8_RP: jim.boyce@live.com:
4 items

To access shared resources in a workgroup, you must have an account on the computer that is sharing the resource. Assuming a small home network of three computers and the desire to access resources on each one, this means you either need to have your own account on each computer or you create a common account on each computer that everyone uses for sharing resources.

Domain

In a domain environment, one or more domain controllers running Windows Server host all user accounts in a centralized directory called Active Directory (AD). Typically, rather than belong to a workgroup, your computer would be joined to the domain. When you log on, you log on with a domain account (stored in AD) rather than a local account (stored on your local computer).

In a domain, AD handles authentication services. So, if you share a folder on your computer, you can specify which other domain users or groups can access that shared resource, and what permissions they have in it. The advantage of this type of resource sharing is that every user needs only a single user account in AD, and that account can be used to access resources anywhere on the network.

How to choose

If you are setting up a home network and all of your computers are running either Windows 7 or Windows 8, a homegroup probably makes the most sense. If your home network includes Windows Vista or Windows XP computers, using a common workgroup to share resources is a good option. Or, you can use a hybrid model where your Windows 7 and Windows 8 computers share their resources through a homegroup and other computers use the workgroup.

In a business network, the number of computers generally dictates whether you choose a workgroup or a domain model for sharing. You can set up a Windows workstation as a file server, create an account for each person on the network on that computer, and use it to share resources. Whether you choose that route or use a domain and Windows Server for sharing really depends on how you will be using the network. In most cases, when you have about 5–10 computers, a domain and server make the most sense.

TIP

Windows client computers running Windows Vista and earlier are limited to a maximum of 10 concurrent connections, making them useful for centralized sharing in small networks but not in larger ones. Windows 7 and Windows 8 both support up to 20 concurrent connections.

NOTE

Using a domain for sharing implies that you have one or more centralized file and print servers on the network, so sharing from your client computer is unlikely (although possible). For that reason, we don't cover domain sharing in detail in this chapter.

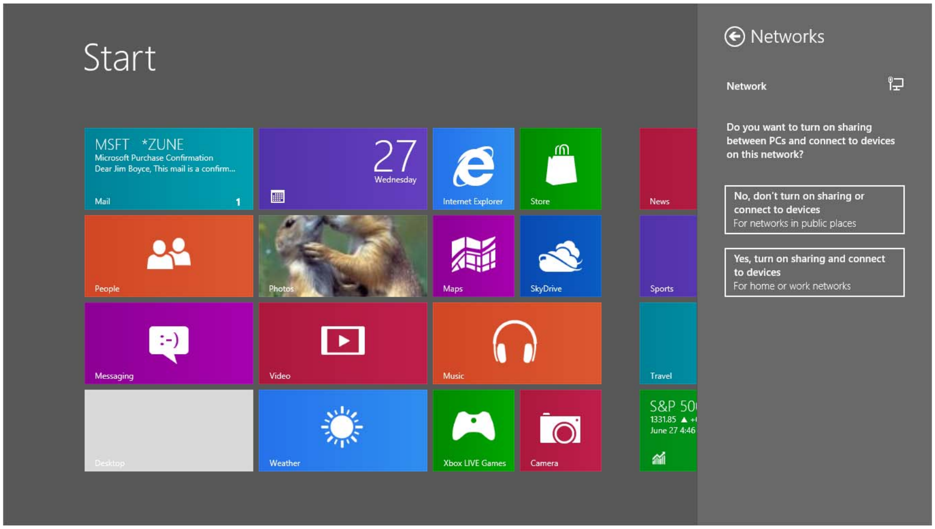
Turn on Sharing and Discovery

Before you start sharing resources on your network, you need to make sure you configure Windows 8 to enable it to share and access shared resources. By default, Windows does not make network resources available to everyone. Instead, Windows 8 requires users to explicitly share resources before others can access them.

A first step on each computer is to make sure sharing and discovery is enabled and all computers belong to the same workgroup. When you first connect to a new network, Windows asks if you want to enable sharing (see Figure 50.3). If the connection is a private one, such as your own wireless network at home, choose the option to turn on sharing. If you are connecting to a public network, you should not turn on sharing.

FIGURE 50.3

Choose whether to turn on sharing.


Start
MSFT *ZUNE
Microsoft Purchase Confirmation
Dear Jim Boyce, This mail is a confirm...
Mail
1
27
Wednesday
Internet Explorer
Store
News
People
Photos
Maps
SkyDrive
Sports
Messaging
Video
Music
Travel
Desktop
Weather
Xbox LIVE Games
Camera
S&P 50
1331.85
June 27 4:46
Networks
Network

Do you want to turn on sharing between PCs and connect to devices on this network?

No, don't turn on sharing or connect to devices
For networks in public places

Yes, turn on sharing and connect to devices
For home or work networks

TIP

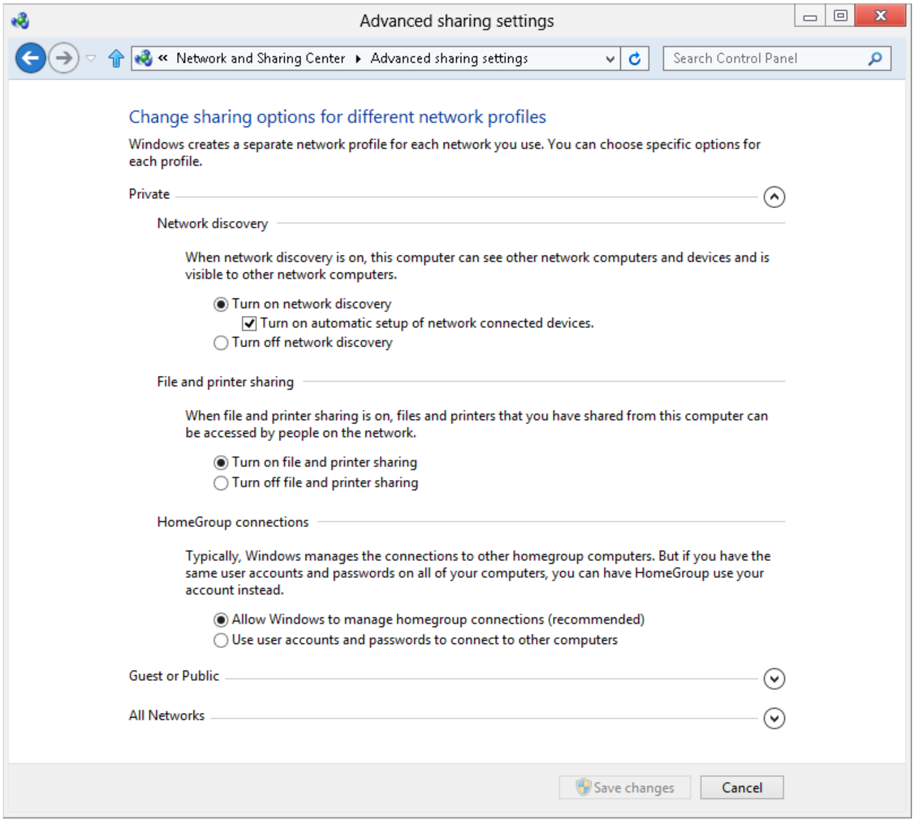
If you need to change the sharing option after connecting to a network, open the Charms Bar, click or tap Settings, and click or tap Network. Right-click or tap and hold the connection you want to configure, and then choose Turn Sharing On or Off. Select the desired option.

All computers must belong to the same workgroup if you are going to use workgroup sharing rather than a homegroup. So on each computer you also want to make sure Network Discovery is turned on and all computers have the same workgroup name.

In the Network and Sharing Center section of the Control Panel, click Change Advanced Sharing Settings in the left pane to open the Advanced Sharing Settings dialog box (see Figure 50.4). Click the arrow beside Private to access the settings for private networks. If it is not already on, enable the options for network discovery and file and printer sharing.

FIGURE 50.4

Configure private network settings.



Advanced sharing settings
« Network and Sharing Center ▸ Advanced sharing settings
Search Control Panel
Save changes
Cancel

Change sharing options for different network profiles

Windows creates a separate network profile for each network you use. You can choose specific options for each profile.

Private

Network discovery

When network discovery is on, this computer can see other network computers and devices and is visible to other network computers.

● Turn on network discovery
☑ Turn on automatic setup of network connected devices.
○ Turn off network discovery

File and printer sharing

When file and printer sharing is on, files and printers that you have shared from this computer can be accessed by people on the network.

● Turn on file and printer sharing
○ Turn off file and printer sharing

HomeGroup connections

Typically, Windows manages the connections to other homegroup computers. But if you have the same user accounts and passwords on all of your computers, you can have HomeGroup use your account instead.

● Allow Windows to manage homegroup connections (recommended)
○ Use user accounts and passwords to connect to other computers

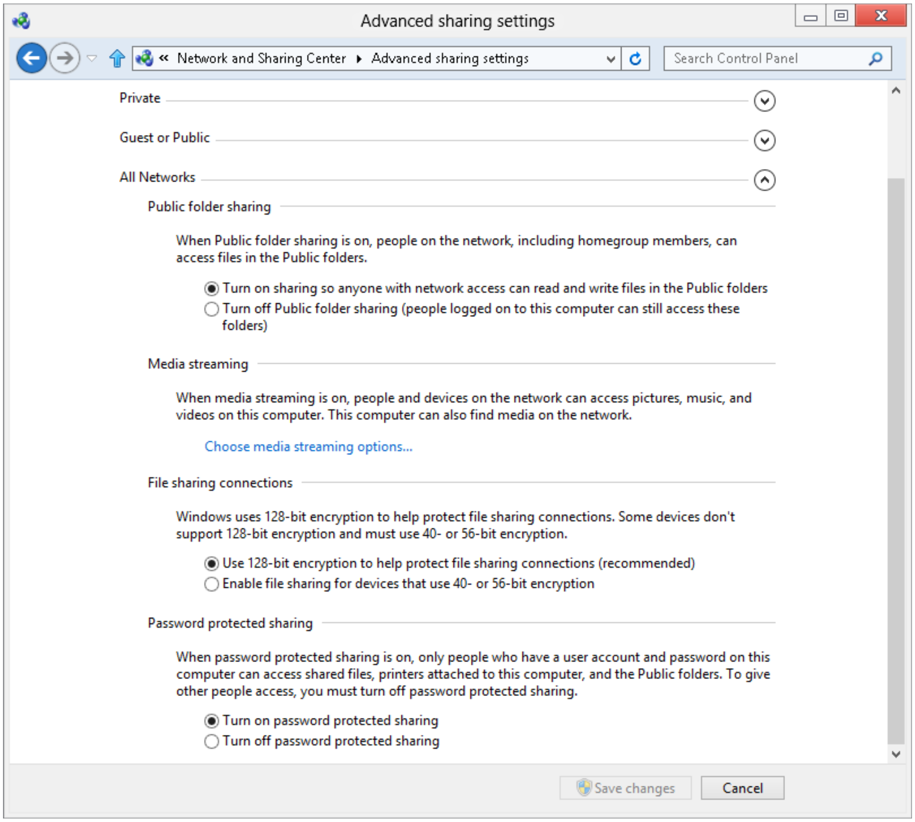
Guest or Public

All Networks

If you want to use Public folders for sharing, expand the options for All Networks and choose the option to turn on Public Folder sharing (see Figure 50.5). If you want to enable people to access shared resources without a user account, choose the option Turn Off Password Protected Sharing. Otherwise, turn on this option.

FIGURE 50.5

Enable sharing through Public folders



Advanced sharing settings
« Network and Sharing Center ▸ Advanced sharing settings
Search Control Panel
Private
Guest or Public
All Networks

Public folder sharing

When Public folder sharing is on, people on the network, including homegroup members, can access files in the Public folders.

● Turn on sharing so anyone with network access can read and write files in the Public folders
○ Turn off Public folder sharing (people logged on to this computer can still access these folders)

Media streaming

When media streaming is on, people and devices on the network can access pictures, music, and videos on this computer. This computer can also find media on the network.

Choose media streaming options...

File sharing connections

Windows uses 128-bit encryption to help protect file sharing connections. Some devices don't support 128-bit encryption and must use 40- or 56-bit encryption.

● Use 128-bit encryption to help protect file sharing connections (recommended)
○ Enable file sharing for devices that use 40- or 56-bit encryption

Password protected sharing

When password protected sharing is on, only people who have a user account and password on this computer can access shared files, printers attached to this computer, and the Public folders. To give other people access, you must turn off password protected sharing.

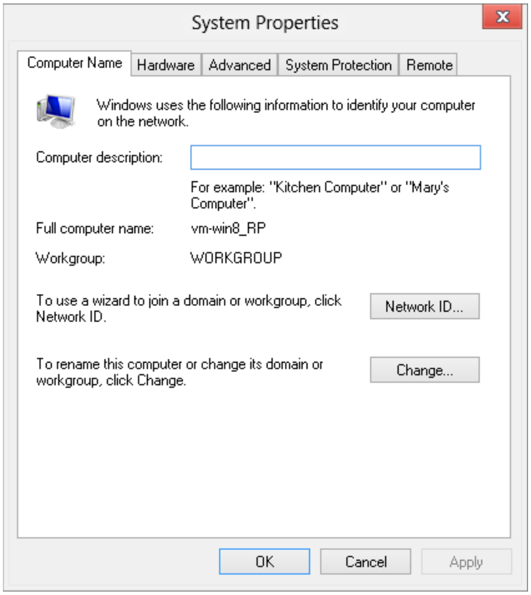
● Turn on password protected sharing
○ Turn off password protected sharing

Save changes
Cancel

If yours is a small network and you won't be using a domain for sharing, make sure all computers are in the same workgroup. On a Windows 7 or Windows 8 computer, open the Control Panel ➪ System and Security ➪ System. In the resulting System dialog box, click Change Settings to open the Computer Name tab of the System Properties dialog box (see Figure 50.6).

FIGURE 50.6

The Computer Name tab of the System Properties dialog box



Windows uses the following information to identify your computer on the network.

Computer description:

For example: "Kitchen Computer" or "Mary's Computer".

Full computer name: vm-win8_RP

Workgroup: WORKGROUP

To use a wizard to join a domain or workgroup, click Network ID.

To rename this computer or change its domain or workgroup, click Change.

The Computer Name tab shows the current computer name, description, and workgroup name. If the workgroup isn't what you need it to be, click the Change button. In the resulting Computer Name/Domain Changes dialog box, click the Workgroup option and type the required workgroup name in the Workgroup text box. Then, click OK. Click OK again to close the System Properties dialog box.

When you've turned on all the Sharing and Discovery options and set the workgroup name, you're ready to move to the next computer in the network and repeat the process. Once all of the computers have sharing and discovery enabled and belong to the same workgroup, they'll be able to find each others' shared resources. But it's still up to each user to decide what they want to share. The sections that follow look at techniques for sharing resources.

NOTE

You can share media files from Windows Media Library, rather than from the folders in which those files are contained. See Chapter 24 for details.

Windows 8 Homegroups

Homegroups are a feature introduced in Windows 7 and carried over to Windows 8 that simplify setting up a home network and sharing resources on the network. When you set up a Windows 7 or Windows 8 computer, Windows creates a homegroup automatically if one doesn't already exist and generates a network password for the homegroup. With that network password, other Windows 7 and Windows 8 computers on the network can join the homegroup, and users on those computers can access resources that are shared by other computers in the homegroup.

TIP

Computers must be running Windows 7 or Windows 8 to participate in a homegroup, and support for homegroups is included in all editions of Windows 7 and Windows 8. However, Windows 7 Starter and Windows 7 Home Basic can participate in a homegroup but cannot create one.

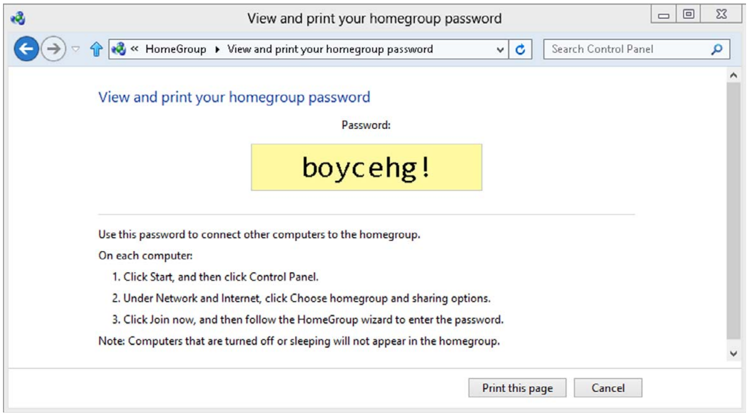
Finding or changing the homegroup password

If Windows 8 doesn't find an existing homegroup, it creates one. From that point on, you can add other Windows 7 or Windows 8 computers to that existing homegroup. All you need is the homegroup password, which Windows creates automatically when it creates the homegroup.

If you don't already know the homegroup password, open the Control Panel and under Network And Internet, click Choose Homegroup And Sharing Options. In the Homegroup applet, click View And Print Your Homegroup Password. A dialog box opens (see Figure 50.7) and displays the password. Click Print This Page if you need a printed copy.

FIGURE 50.7

View or print your homegroup password.


View and print your homegroup password
« HomeGroup ▸ View and print your homegroup password
Search Control Panel

View and print your homegroup password

Password:

boycehg!

Use this password to connect other computers to the homegroup.

On each computer:

1. Click Start, and then click Control Panel.
2. Under Network and Internet, click Choose homegroup and sharing options.
3. Click Join now, and then follow the HomeGroup wizard to enter the password.

Note: Computers that are turned off or sleeping will not appear in the homegroup.

As mentioned previously, Windows sets the homegroup password when it sets up the homegroup. If needed, you can change the password. To do so, first make sure all of the computers in the homegroup are turned on. Then, open the Homegroup applet as explained previously and click Change The Password. In the resulting dialog box, click Change The Password. Windows generates a new password that you can use, or you can type your own password. In either case, click Next when you're satisfied with the new password.

Next, go to each of the other computers on the homegroup and open the Homegroup applet from the Control Panel. Windows detects that the password has changed and gives you the opportunity to change it. Click the Type New Password button, type the new password, and click Next. After the password has been changed, click Finish. Repeat the process on all of the other Windows 7 and Windows 8 computers on your homegroup.

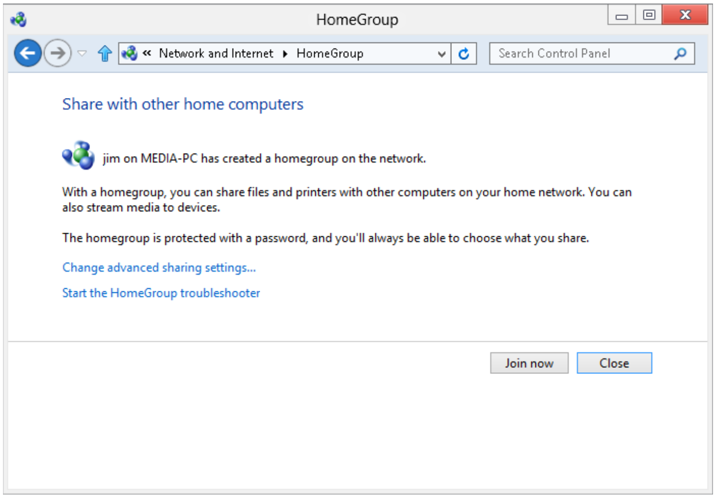
Joining a homegroup

When you add a new Windows 8 computer to your network, you can add it to your homegroup (although you don't have to unless you want the computer to participate in the homegroup). To add a computer to the homegroup, boot the computer and make sure the computer is on the network. See Chapter 49, "Creating a Home Network," if you need help with that.

Next, open the Control Panel and then open the Homegroup applet. Click the Join Now button (see Figure 50.8); then, in the resulting Join A Homegroup dialog box, click Next and choose which items you want to share (see Figure 50.9). Then, click Next. Type the homegroup password, click Next, and click Finish.

FIGURE 50.8

Click Join Now to join the homegroup.


HomeGroup
« Network and Internet ▸ HomeGroup
Search Control Panel

Share with other home computers

jim on MEDIA-PC has created a homegroup on the network.

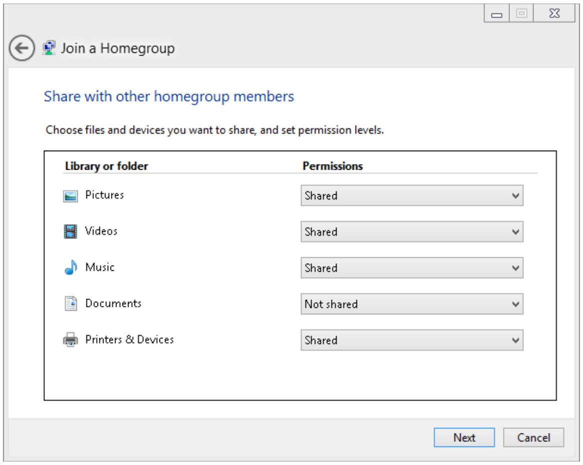
With a homegroup, you can share files and printers with other computers on your home network. You can also stream media to devices.

The homegroup is protected with a password, and you'll always be able to choose what you share.

Change advanced sharing settings...
Start the HomeGroup troubleshooter
Join now
Close

FIGURE 50.9

Choose the items to share with the homegroup.



Share with other homegroup members

Choose files and devices you want to share, and set permission levels.

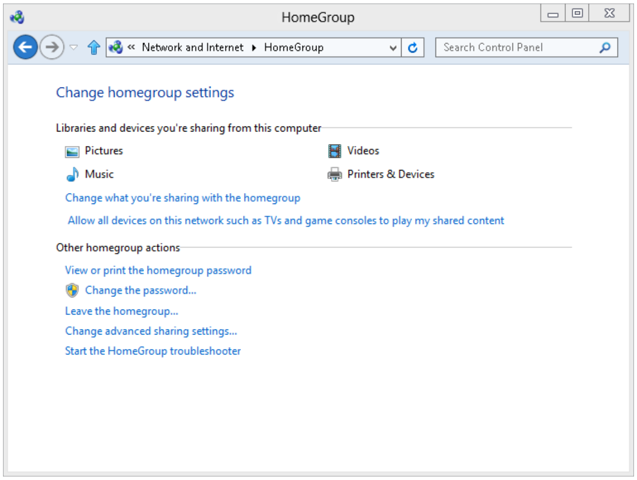
Library or folder	Permissions
Pictures	Shared
Videos	Shared
Music	Shared
Documents	Not shared
Printers & Devices	Shared

Sharing items with the homegroup

If you change your mind about what you want to share with the homegroup, you can change sharing options accordingly. To do so, open the Homegroup applet from the Control Panel (see Figure 50.10). If you just want to choose which items to share, place a check beside those you want to share and deselect the check box by those you don't want shared.

FIGURE 50.10

The HomeGroup dialog box



Change homegroup settings

Libraries and devices you're sharing from this computer

Pictures
Videos
Music
Printers & Devices

Change what you're sharing with the homegroup

Allow all devices on this network such as TVs and game consoles to play my shared content

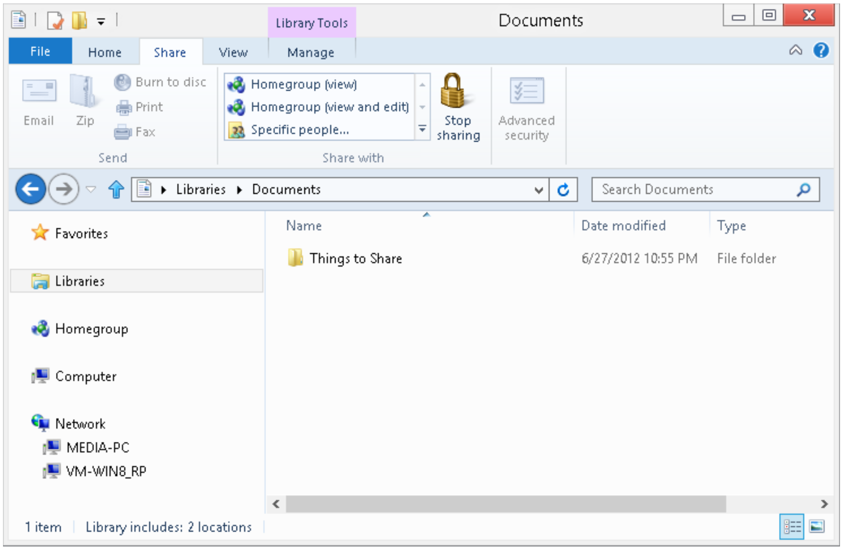
Other homegroup actions

View or print the homegroup password
Change the password...
Leave the homegroup...
Change advanced sharing settings...
Start the HomeGroup troubleshooter

You can easily share other items with your homegroup. To do so, open the folder containing the item you want to share. For example, if you want to share a folder in the Documents folder, open Documents, click the folder, and in the ribbon click the Share tab; then choose Homegroup (View) to give others the capability to read items in the folder, Homegroup (View And Edit) to enable them to also write to the folder, or Stop Sharing to remove the folder from sharing (see Figure 50.11).

FIGURE 50.11

Sharing a folder


Library Tools
Documents
File
Home
Share
View
Manage
Email
Zip
Burn to disc
Print
Fax
Send
Homegroup (view)
Homegroup (view and edit)
Specific people...
Share with
Stop sharing
Advanced security
Libraries ▸ Documents
Search Documents
Favorites
Libraries
Homegroup
Computer
Network
MEDIA-PC
VM-WIN8_RP
Name
Date modified
Type
Things to Share
6/27/2012 10:55 PM
File folder
1 item
Library includes: 2 locations

Excluding items from sharing

In some situations, you might want to share a folder or library but exclude access to certain folders or even individual files. Excluding a folder or file is simply a matter of selecting the item and clicking Stop Sharing. Open the folder containing the folder you want to exclude, or in the case of an individual file, open the folder containing the file. Click the item you want to exclude, and click Stop Sharing in the ribbon. That library, folder, or file will not show up when others browse the homegroup.

Sharing with individual users

You can also share folders and files with individual users, but those users must have an account on your computer and access the files from that same computer. For example, if you have a single home computer you share with your spouse and children, you might want to share a folder with only your spouse and not the children. To share the folder or file, open the folder containing the item to be shared, click it, and click the Share tab in the ribbon. Choose Specific People to open the File Sharing dialog box, choose an account from the drop-down list, and click Add. Then, click Share to close the dialog box.

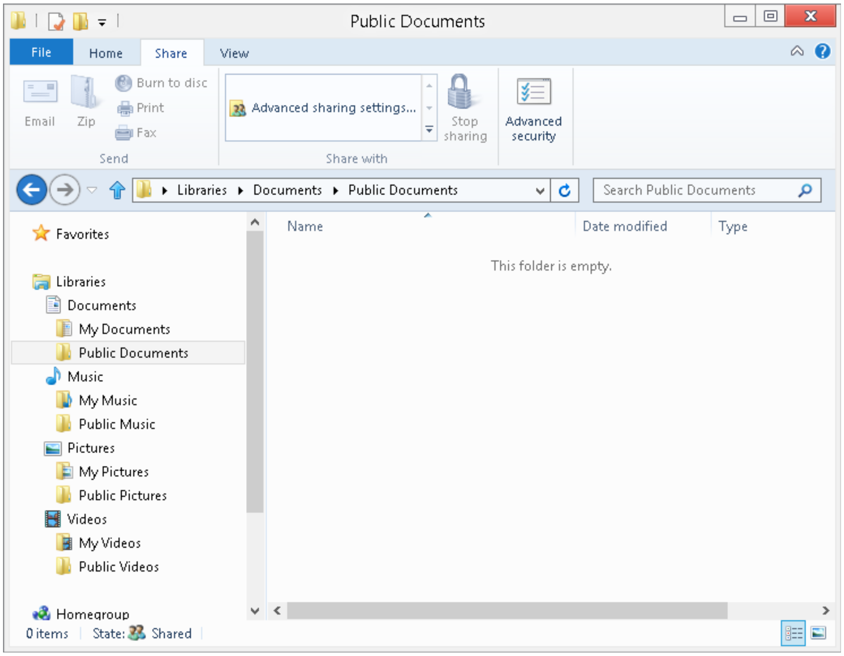
To access a folder or file that has been shared in this way, open the Network folder, and expand the local computer, then the Users folder, and finally the user who is sharing the folder or file.

Using Public Folders

Windows 7 and Windows 8 include a Public folder from which files are shared automatically. This feature is similar to the Shared Documents folder in Windows XP and Windows Vista. You can simply move any files that you intend to share across all user accounts or computers in a private network to that folder. To get to that folder, start by opening File Explorer. Then, expand the Documents, Music, Pictures, or Videos libraries in the left Navigation pane. Figure 50.12 shows the Public folders.

FIGURE 50.12

Public folders in various libraries


Public Documents
File
Home
Share
View
Email
Zip
Burn to disc
Print
Fax
Send
Advanced sharing settings...
Share with
Stop sharing
Advanced security
Libraries ▸ Documents ▸ Public Documents
Search Public Documents
Favorites
Libraries
Documents
My Documents
Public Documents
Music
My Music
Public Music
Pictures
My Pictures
Public Pictures
Videos
My Videos
Public Videos
Homegroup
Name
Date modified
Type
This folder is empty.
0 items
State: Shared

The Public folders you see in the Navigation pane are actually all contained in a single folder named Public in the Users folder. (The default path is `C:\Users\Public`.) The Public folder is organized much like your Documents folders. It contains subfolders for storing documents, downloads, music, pictures, and videos. If you have Media Center installed, it also contains a Recorded TV folder, in which Media Center–Recorded TV files are stored.

Perhaps the easiest way to move files into a Public folder would be to open one of its subfolders, like Public Documents or Public Pictures. Then, open the folder that contains the files you want to share. Size and position the two windows so you can see both. Then drag files from one folder to the other. See Chapter 28, “Managing Files and Folders,” for more information on moving and copying files.

The Public folder is shared in a way where every user on the computer (and in the network) has free reign over its contents. In other words, every user has equal rights to the Public folder. If you have files you want to share more selectively, such as only with certain people or only with certain permissions, use the method described previously in the section, “Sharing with individual users.”

Advanced Sharing

Advanced Sharing allows a user with administrative privileges to set custom permissions for multiple users, control the number of simultaneous connections and caching for offline files, and set other advanced properties. Some of these topics require training in or knowledge of network administration. The Public folder and selective sharing methods described in the preceding sections should be adequate for a home network and much easier to work with.

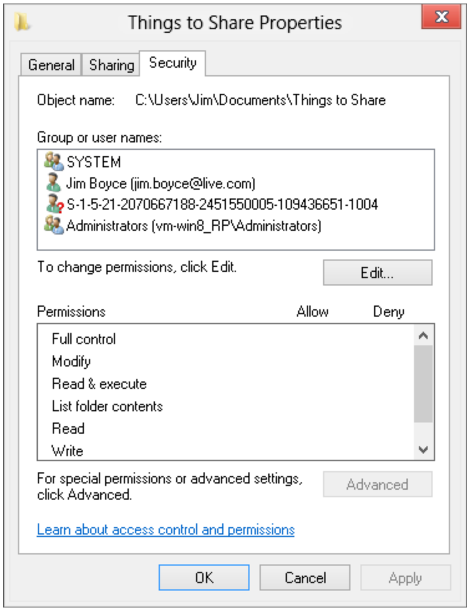
For people who understand the concepts (and potential problems) involved, we’ll just quickly run through the process. Locate the folder you want to share, right-click that folder’s icon, and choose Properties. Click the Sharing tab and click Advanced Sharing. Elevate your privileges (if prompted) and choose Share This Folder. Then click the Apply button. Set the number of simultaneous users up to a maximum of 20 and (optionally) add a comment.

To configure sharing permissions, click the Permissions button to open the Permissions dialog box for the shared folder. Here, you can view existing sharing permissions and also add and remove users and groups. You’ll notice that you are limited to specifying Full Control, Change, or Read permission sharing levels.

If the disk where the shared folder resides is on an NTFS volume, you can also set NTFS permissions, which are more flexible than sharing permissions. To set NTFS permissions, open the properties for the folder and click the Security tab (see Figure 50.13).

FIGURE 50.13

Security tab for NTFS permissions



Object name: C:\Users\Jim\Documents\Things to Share

Group or user names:

- SYSTEM
- Jim Boyce (jim.boyce@live.com)
- S-1-5-21-2070667188-2451550005-109436651-1004
- Administrators (vm-win8_RP\Administrators)

To change permissions, click Edit.

Permissions	Allow	Deny
Full control		
Modify		
Read & execute		
List folder contents		
Read		
Write		

For special permissions or advanced settings, click Advanced.

On the Security tab, you can add or remove users and groups and specify the permission levels for each one. The available permissions are more granular than the sharing permissions described previously, giving you finer control over what each user or group can do in the folder. As you assign permissions, keep in mind that the most restrictive permissions apply. For example, if you share a folder and apply Full Control for all users, but then set NTFS permissions so that all users have only Read access, then the more restrictive NTFS permissions will apply and users will only be able to read items in the folder, not modify them.

Identifying Shared Folders

In Windows 8, you have a few methods for identifying which folders are shared. First, in File Explorer, open a folder. If the folder is shared, you'll see the words “State: Shared” in the status bar at the bottom of the window.

You can also use the Shared Folders snap-in with the Computer Management console to see which folders are shared. To open Shared Folders, click Start, right-click Computer, and choose Manage. When the Computer Management console opens, expand the Shared Folders branch and click Shares. The folders that are shared, whether visible or hidden, appear in the right pane.

You can also use the `NET` command in a command console to see what is shared. Open a command console and type the command **`NET SHARE`** to see a listing of shared resources.

Sharing a Printer

Printers in a local area network are usually connected to one of the computers in that network. To ensure that the printer is shared, so everybody in the network can use it, follow these steps:

TIP

With the right hardware, you can connect a printer directly to a LAN without going through a computer. With that type of arrangement, you need to make sure that the printer is turned on, connected to the network, and configured with network settings appropriate for your network.

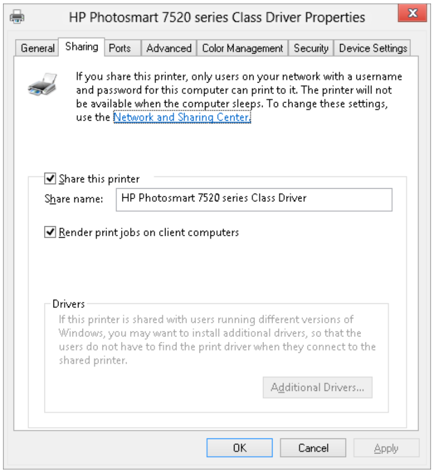
1. Go to the computer to which the printer is connected by cable. If either is turned off, turn on the printer first and the computer second.
2. Open Devices And Printers from Control Panel.
3. Right-click the printer and choose Properties to open the Properties dialog box for the printer.
4. Click the Sharing tab; then select Share This Printer, type a name in the Share Name text box, and choose to render print jobs on the client, as in Figure 50.14.

NOTE

The Render Print Jobs On Client Computers option lets each user control print jobs from his or her own computer. In earlier versions of Windows, most print jobs had to be managed from the printer to which the computer was physically attached.

FIGURE 50.14

Sharing a printer



If you share this printer, only users on your network with a username and password for this computer can print to it. The printer will not be available when the computer sleeps. To change these settings, use the Network and Sharing Center.

☑ Share this printer

Share name: HP Photosmart 7520 series Class Driver

☑ Render print jobs on client computers

Drivers

If this printer is shared with users running different versions of Windows, you may want to install additional drivers, so that the users do not have to find the print driver when they connect to the shared printer.

6. Click OK.

When you click the printer's icon in Devices and Printers, the status bar indicates that the printer is shared. The printer should show up automatically in all network computers' Print dialog boxes. If it doesn't show up on a particular computer, see Chapter 32, "Installing and Managing Printers," for information on installing a shared network printer.

What About Sharing Programs?

Although you can share folders and documents freely on a LAN, there's no way to share programs. You can only run programs currently installed on your computer. If you try to open a document on another computer, but don't have the appropriate program for that document type, you can't open the document.

Don't bother trying to copy an installed program from one computer to another — except in rare cases it won't work. Only programs that you specifically install on your own computer will run on your computer.

The only solution will be to install the necessary program on your own computer.

Wrap-Up

People create computer networks to share resources among computers. Resources include things such as an Internet connection, media files, folders, and printers. Windows 8's sharing and discovery makes it relatively easy to share resources and discover them. This chapter has focused on the "sharing" part. The following are some of the key points covered in this chapter:

- To turn on sharing and discovery, open the Network and Sharing Center and choose Advanced Sharing Settings.
- Use a homegroup to easily share resources among Windows 7 and Windows 8 computers on a small network.
- To share a printer, use the Sharing tab of its Properties dialog box.
- One way to share files is to move them to the Public folder or one of its subfolders.
- Use the Computer Management console or the `NET SHARE` command to see which folders are shared.

CHAPTER

51

Using Shared Resources

IN THIS CHAPTER

Accessing remote resources

Opening documents from remote computers

Transferring files between networked computers

Using a shared printer

Using shared media

Chapters 49 and 50 covered all the basics of setting up and sharing resources on a private home or small business network. This chapter assumes that you've already done all of that. Nothing in this chapter will work until the network is set up, you've turned on network sharing and discovery on each Windows 8 computer, and you've shared some things on the network.

This chapter looks at how you find and use shared resources from computers within the network. It looks at opening documents from remote resources, moving and copying files between networked computers, using remote printers, and ways of using shared media.

UNC Paths

Before diving too deep into methods for accessing network resources, let's take some time to delve into a topic that will help you navigate network resources more easily — UNC paths.

UNC stands for Universal Naming Convention. A UNC path is expressed in the form:

```
\\MachineName\PathName
```

`MachineName` is the name of the computer and `PathName` is a folder path on that computer. For example, assume that your network includes a computer named SNOOPY that you use as a file server. On that computer is a folder that you have shared as SharedDocs. Within that SharedDocs folder is a subfolder named Contracts. The UNC path to the Contracts folder would be `\\SNOOPY\SharedDocs\Contracts`. Note that the UNC path is not case-sensitive.

A UNC path makes it easy to navigate the network, particularly when you know the path name already. Using a UNC path is often quicker than navigating to the Network folder, and then to a remote computer, and drilling down through its shared folders. Instead, you can open the Computer folder, click in the Address bar, and simply type the UNC path to the remote share that you want to use.

Another point to understand is that you can specify the IP address of the remote computer in place of the computer name in the UNC path. So, assuming that our trusty computer named SNOOPY has the IP address 192.168.0.5, the UNC path to the Contracts folder would be `\\192.168.0.5\SharedDocs\Contracts`.

Now that you're up to speed on UNC paths, let's take a look at how to access network resources.

Accessing Remote Resources

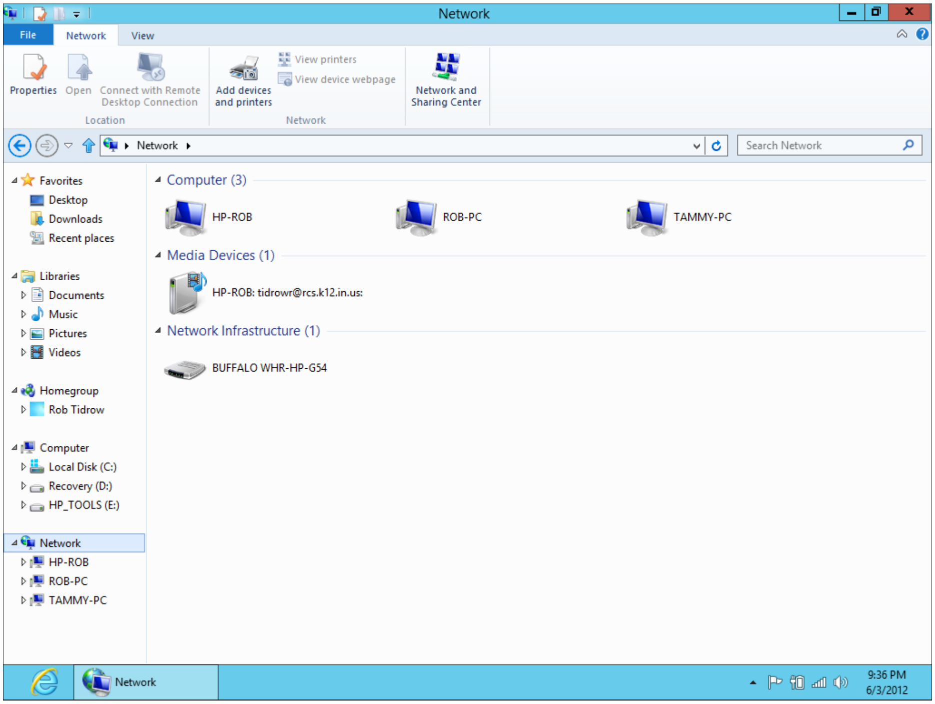
Every Windows 8 computer on which you've enabled network sharing and discovery should show up in every computer's Network folder. The same is true of any Windows 7, Vista, and XP computers in the network that have at least one shared resource (such as the built-in Shared Documents folder). To open the Network folder on a Windows 8 computer, use whichever technique is most convenient:

- Display the Charms Bar, click Search, type **network**, click Settings, and click Network And Sharing Center. Information about your network appears in the View Your Active Networks area.
- If you're already in a File Explorer folder, click Network in the Folders list.

The first time you open the Network folder on a computer, it might take a few seconds for it to discover other computers in the network. But within a few seconds you should see an icon for each computer in the network, as in the example shown in Figure 51.1. Notice how each computer is also accessible from the Folders list after expanding the Network category in that list.

FIGURE 51.1

Sample Network folder


Network
File
Network
View
Properties
Open
Connect with Remote Desktop Connection
Location
Add devices and printers
View printers
View device webpage
Network
Network and Sharing Center
Network
Search Network
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Network
HP-ROB
ROB-PC
TAMMY-PC
Computer (3)
HP-ROB
ROB-PC
TAMMY-PC
Media Devices (1)
HP-ROB: tidrowr@rcs.k12.in.us:
Network Infrastructure (1)
BUFFALO WHR-HP-G54
Network
9:36 PM
6/3/2012

Each computer's icon is like a folder in that, when you open it, you see shared resources from that computer. That includes a folder icon for each shared folder and printer icons for any shared printers connected to that computer.

If you use the Network folder often, you'll want to make sure it's easy to find its icon. To put a Network icon on your desktop, right-click the desktop and choose Personalize. In the left column, click Change Desktop Icons. Select the Network check box (and the check boxes of any other icons you want) and click OK.

If you don't have a Network option on the right side of your Start menu, you can add one using methods for customizing the Start screen discussed in Chapter 12.

To add Network to your Favorite Links in File Explorer, open a folder and make sure you can see the Navigation pane. Open the Folders list, and then drag the Network icon in the Folders list into the Favorites Bar.

TIP

Any time you're in File Explorer, clicking the leftmost arrow in the Address bar usually displays a quick link to the Network folder.

Opening Remote Documents

One of the advantages to having a network is that you can put documents in shared folders and open them from any computer in the network. For example, you might put all your important work documents in a shared folder on your main work computer. If you also have a portable computer you can use outside on sunny days (or from the sofa on lazy days), you can work directly with those documents from the remote computer.

The process is really no different from opening a document on a local computer. You could, for instance, just navigate to the folder, via the Network folder, in which the document is stored. Or, open the Computer folder, type the UNC path to the shared folder in the Address bar, and press Enter. Then, double-click (or click) the document you want to edit, and the document will open from the remote computer (providing that the local computer has the appropriate program installed for working with that type of document).

Optionally, you can go through the program's Open dialog box to get to the document. Here's how:

1. Open the program you want to use and choose File ➪ Open.
2. In the Open dialog box, click Network (if available) at the left side of the dialog box.
3. First, select the computer on the network where the document resides. Then navigate to the folder for (or a parent folder to) the document. If you have to open a parent folder, just navigate down through the subfolders until you get to the document's icon.
4. Click or double-click the document's icon.

Once the document is open, you can edit it or print it however you like. When you save the document, your changes will be saved at the original location. If you want to save a local copy of the document to work with, choose File ➪ Save As within the program, navigate to a local folder such as your Documents folder, and save your copy there.

Opening a read-only copy

If you try to open a document that someone already has open on another computer, you might see a message telling you what your options are. Those options will vary from one program to the next. For example, you might be offered the option to open a read-only copy of the document, or to open an editable copy of the document. If you choose to open a read-only copy, you can then choose File ➪ Save As in the program and save a local copy that you can modify.

Creating network locations

If you have your own website, or permission to upload to an FTP site, Microsoft SharePoint site, or really anything on the Internet to which you can upload files, you can add an icon for that location to your Computer folder. Doing so will allow you to upload files to that location using the same techniques you use to save a file to your own computer.

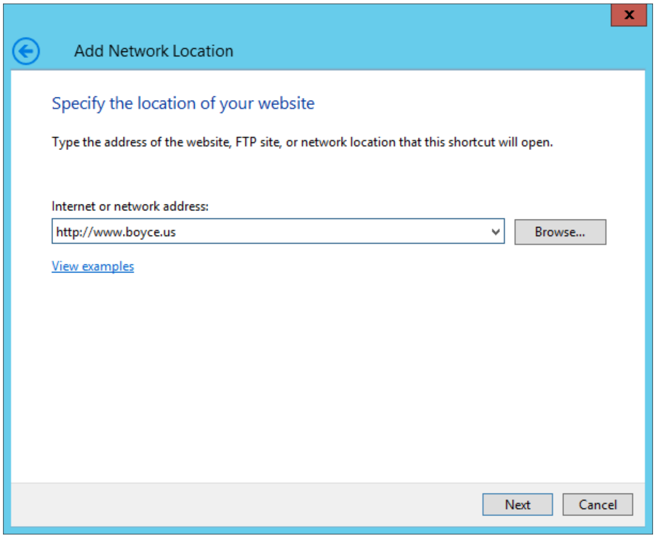
You'll need to know the URL (address) to which you can download. Chances are you'll need a username and password as well. The people who own the site to which you'll be uploading will provide that information when you set up your account. They might also provide upload instructions. But as long as you know the URL and your username and password, you should be able to use the technique described here in addition to whatever method they provide.

To create a link to the Internet location, follow these steps:

1. Open your Computer folder.
2. Right-click any unused space in the window and choose Add A Network Location.
3. Click Next on the first wizard page.
4. Click Choose A Custom Network Location and click Next.
5. Type the complete URL of the remote site. For example, if it's a website you own, include the `http://`. In Figure 51.2, we're about to create a shortcut to the `www.boyce.us` site. If the shortcut is to an FTP site for which you have upload permissions, use the `ftp://` prefix on the URL. Click Next. To see a list of examples, click the View Examples link in the middle of the window.
6. If the remote resource requires a username and password, you'll be prompted to enter your credentials. Enter the credentials and click OK.
7. The next wizard page will suggest the URL (without the `http://` or `ftp://` prefix) as the name of the shortcut icon. You can replace that with any name you like because it's used only as the label for the shortcut. Type the desired name and click Next.
8. On the last wizard page, you can select (check) the check box Open This Network Location When I Click Finish if you want to see the remote folder immediately. Or clear the check box if you don't want to see that right now. Then click Finish.

FIGURE 51.2

Providing the URL of an Internet resource



Add Network Location
Browse...
Next
Cancel

Specify the location of your website

Type the address of the website, FTP site, or network location that this shortcut will open.

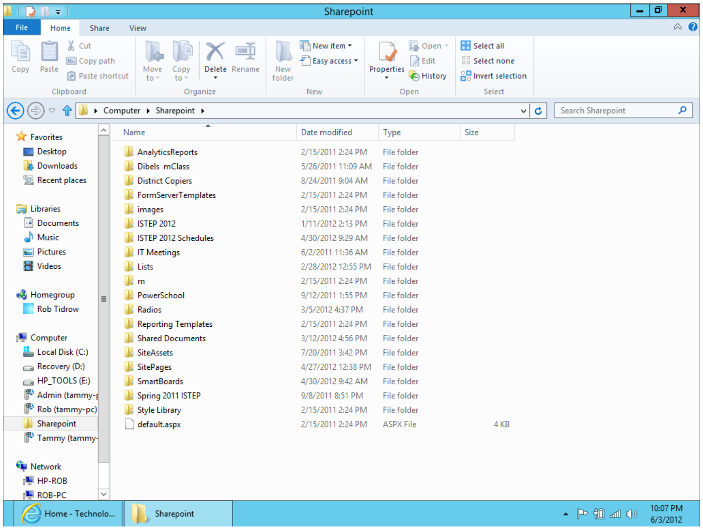
Internet or network address: http://www.boyce.us

View examples

When you double-click the icon for the remote site, it will open in File Explorer, looking much the same as any local folder on your own hard disk. You may not have quite as many options to choose from in the Explorer bar. In Figure 51.3, we've opened a SharePoint site.

FIGURE 51.3

SharePoint site as a folder in File Explorer



Sharepoint
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Computer ▸ Sharepoint ▸
Search Sharepoint
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Admin (tammy-
Rob (tammy-pc)
Sharepoint
Tammy (tammy-
Network
HP-ROB
ROB-PC
Home - Technolo...
Sharepoint
10:07 PM
6/3/2012

Name	Date modified	Type	Size
AnalyticsReports	2/15/2011 2:24 PM	File folder	
Dibels mClass	5/26/2011 11:09 AM	File folder	
District Copiers	8/24/2011 9:04 AM	File folder	
FormServerTemplates	2/15/2011 2:24 PM	File folder	
images	2/15/2011 2:24 PM	File folder	
ISTEP 2012	1/11/2012 2:13 PM	File folder	
ISTEP 2012 Schedules	4/30/2012 9:29 AM	File folder	
IT Meetings	6/2/2011 11:36 AM	File folder	
Lists	2/28/2012 12:55 PM	File folder	
m	2/15/2011 2:24 PM	File folder	
PowerSchool	9/12/2011 1:55 PM	File folder	
Radios	3/5/2012 4:37 PM	File folder	
Reporting Templates	2/15/2011 2:24 PM	File folder	
Shared Documents	3/12/2012 4:56 PM	File folder	
SiteAssets	7/20/2011 3:42 PM	File folder	
SitePages	4/27/2012 12:38 PM	File folder	
SmartBoards	4/30/2012 9:42 AM	File folder	
Spring 2011 ISTEP	9/8/2011 8:51 PM	File folder	
Style Library	2/15/2011 2:24 PM	File folder	
default.aspx	2/15/2011 2:24 PM	ASPX File	4 KB

You can treat the folder as you would any other. For example, you can create a new folder, or rename or delete existing files and folders by right-clicking, just as you would in any folder on your C: drive. You can also move and copy files to/from the site. Things will be slower than on your own computer because the remote resource could be thousands of miles away, but the techniques should all be the same.

TIP

You can rename any icon, at any time, under Network Locations just as you would any other icon. Just right-click the icon and choose Rename.

If things don't work as described here, your best resource for getting answers would be the people who provided the site. They're the only ones who know the details of that site.

Saving to a Remote Computer

Any time you save a new document — whether it's one you've created yourself or something you're downloading — a Save As dialog box (or something similar) will open, enabling you to save the file. The dialog box will have a Folders list so that you can choose where you want to save the document.

As with the Open dialog box, you can choose the Network folder from the Folders list to get to all of the locations in your Network folder, and then navigate to wherever you want to save the file from there. Or, click in the text box where you would normally enter the filename and instead enter a UNC path to the folder where you want to store the file. After the folder opens in the dialog box, enter the filename.

Downloading Programs to a Network Share

If you regularly download programs to install on multiple computers, consider using the folder named Public Downloads within your Public folder. After you save a downloaded program file to that folder, you'll be able to install it on all the computers in the network. You still have to install it on each computer individually, but there is no need to download it on every computer, especially if you're sharing a not-so-speedy Internet connection.

Start by creating the Public Downloads folder in your own Public Documents folder, or on another shared folder on your network. Then, initiate the download as you normally would. When the File Download dialog box appears, click Save or Save As. In the Save As dialog box, navigate to the shared Public Downloads folder and save the file there.

TIP

You can download the file from the computer where the Public Downloads folder resides or from another computer on the network. The advantage of performing the download from the same computer where the file will be stored is that you minimize network traffic. If you are instead saving to a shared folder across the network, the file comes through the network to your computer and then goes across the network to the shared folder, effectively doubling the network traffic and slowing down the process.

After the file has been downloaded, you can access it from any other computer on the network to install the program. Just browse the network from the computer where you want to install the program, open the shared Public Downloads folder, and double-click the file to begin the installation.

NOTE

Some programs need to be installed from a local copy of the file rather than across the network. If you have problems installing across the network, copy the file across the network to the local computer and install from that local copy.

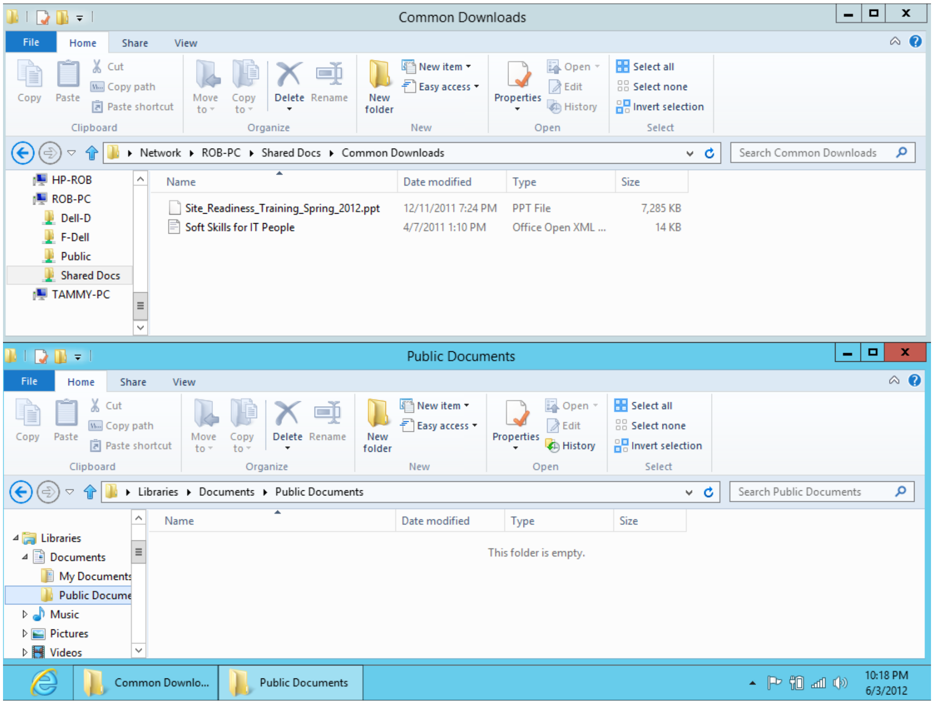
Transferring Files Between Computers

Moving and copying files on a LAN is virtually identical to doing so on a single computer. You can use any of the techniques described in Chapter 28 to select, move, or copy files from any folder on your own computer to any shared folder or from any shared folder to any folder on your own computer. You can also use those same techniques to move and copy files between shared folders on any two remote computers on the network.

For example, let's say you're sitting at a computer named Hobbes, and you have a bunch of files in a subfolder named `Rob-PC\Common Downloads` on a computer named Rob-PC. So, the UNC path would be `\\Rob-PC\SharedDocs\Common Downloads`. You want to copy one or more files to the Downloads folder of your own user account on HP-Rob. Just open the Network folder. Then open the Rob-PC ➪ SharedDocs ➪ Common Downloads folder. Then, open the Documents folder for your user account. It might be easiest if you size and position the windows so you can see the contents of both, as in Figure 51.4.

FIGURE 51.4

Remote shared folder (top) and local folder (bottom)


Common Downloads
File
Home
Share
View
Copy
Paste
Cut
Copy path
Paste shortcut
Clipboard
Move to
Copy to
Delete
Rename
Organize
New folder
New item
Easy access
New
Properties
Open
Edit
History
Open
Select all
Select none
Invert selection
Select
Network ▸ ROB-PC ▸ Shared Docs ▸ Common Downloads
Search Common Downloads
HP-ROB
ROB-PC
Dell-D
F-Dell
Public
Shared Docs
TAMMY-PC
Public Documents
Libraries ▸ Documents ▸ Public Documents
Search Public Documents
Libraries
Documents
My Documents
Public Docume
Music
Pictures
Videos
Common Downlo...
Public Documents
10:18 PM
6/3/2012

Name	Date modified	Type	Size
Site_Readiness_Training_Spring_2012.ppt	12/11/2011 7:24 PM	PPT File	7,285 KB
Soft Skills for IT People	4/7/2011 1:10 PM	Office Open XML ...	14 KB

Name	Date modified	Type	Size

This folder is empty.

With both folders open, as in the figure, you can select the files you want to copy in the remote folder using any technique you like, as discussed in Chapter 28. To copy (rather than move) the items to the remote folder, right-drag any selected icon to the remote folder and then choose Copy Here after you release the mouse button. (You also can drag using the left mouse button; the files will be copied from the remote location to the local one.) That's all there is to it. As we said, it's no different from moving and copying files between folders and drives on your own computer, except that you have to use the Network folder or a UNC path to open the remote folder.

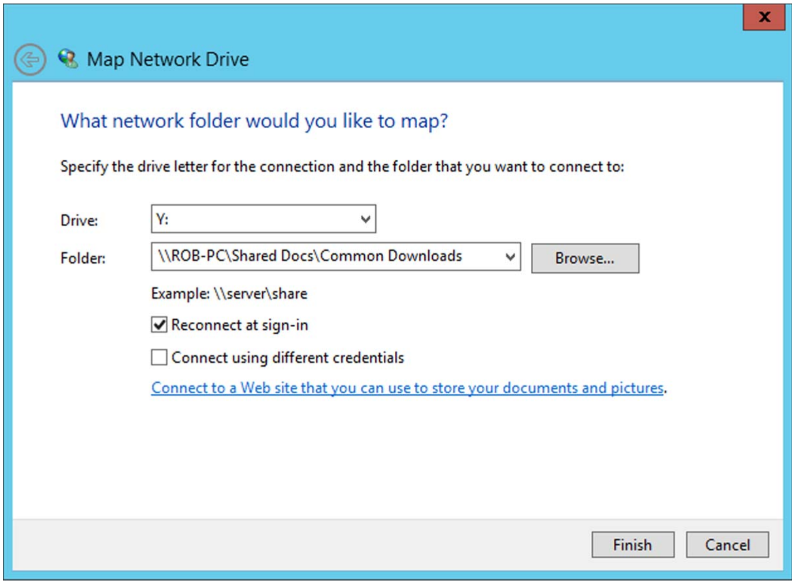
Mapping Drive Letters to Shared Folders

Some programs require that you assign a drive letter to remote resources. You can assign any unused drive letter to a resource. For example, if you already have drives A: through F: in use, you can assign drive letters G: through Z: to any shared resource. Use the following steps to map a drive letter to a shared folder:

1. Go to the computer on which you need to assign a drive letter to a remote shared resource.
2. Open any folder (such as the Computer folder), choose the Computer tab, and click Map Network Drive. The Map Network Drive dialog box opens.
3. Click the Browse button if the Folder entry is not filled in already to open the Browse For Folder dialog box.
4. In the Browse For Folder dialog box, click the name of the shared resource to which you want to map a drive letter, so its name is selected (highlighted). For example, in Figure 51.5, we're about to map the drive letter Y: to the shared Download folder on a computer named Rob-PC.
5. Click OK.
6. If you want the drive to be mapped automatically each time you log on, select the Reconnect At Sign-In check box.
7. Click Finish.

FIGURE 51.5

Map Network Drive dialog box



What network folder would you like to map?

Specify the drive letter for the connection and the folder that you want to connect to:

Drive: Y:

Folder: \\ROB-PC\Shared Docs\Common Downloads

Example: \\server\share

☑ Reconnect at sign-in

☐ Connect using different credentials

Connect to a Web site that you can use to store your documents and pictures.

The remote resource will open. You can close that folder and also close the Network folder. Because you've mapped a drive letter to the remote resource, it will appear in your Computer folder. In Figure 51.6, we've mapped two resources: Y: is mapped to the Download folder on the computer named Rob-PC, and Z: is mapped to the hidden root share of drive C: on the computer with an IP address of 192.168.0.2.

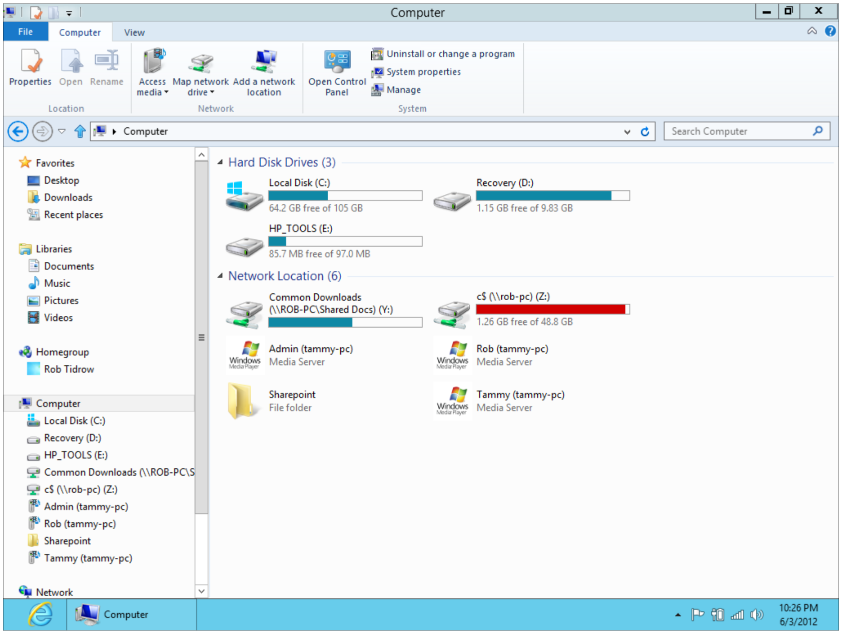
Hidden Shares

Windows creates a hidden administrative share for each drive connected to the computer. These shares, which share the root of the drive, take the name of the drive letter followed by a $ sign. For example, the administrative share for drive C: is C$, for drive E: would be E$, and so on. If you have an administrative account (or have access to the administrative shares) on the remote computer, you can map to its hidden share using the UNC path. For example, to connect to drive C: on a computer named Spock, you would use the UNC path `\\Spock\C$`.

These shares are called "hidden shares" because they do not appear when you browse the network for resources. For example, you won't see these shares in the Network folder. In addition, you can create your own hidden shares. When you share the resource, just add a $ sign at the end of the share name. See Chapter 50, "Sharing Resources on a Network" to learn more about sharing resources on the network.

FIGURE 51.6

Drives Y: and Z: are actually shared resources on other computers.


Computer
File
Computer
View
Properties
Open
Rename
Location
Access media
Map network drive
Add a network location
Network
Open Control Panel
Uninstall or change a program
System properties
Manage
System
Computer
Search Computer
Favorites
Desktop
Downloads
Recent places
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Common Downloads (\\ROB-PC\S
c$ (\\rob-pc) (Z:)
Admin (tammy-pc)
Rob (tammy-pc)
Sharepoint
Tammy (tammy-pc)
Network
Hard Disk Drives (3)
Local Disk (C:)
64.2 GB free of 105 GB
Recovery (D:)
1.15 GB free of 9.83 GB
HP_TOOLS (E:)
85.7 MB free of 97.0 MB
Network Location (6)
Common Downloads (\\ROB-PC\Shared Docs) (Y:)
c$ (\\rob-pc) (Z:)
1.26 GB free of 48.8 GB
Admin (tammy-pc)
Media Server
Rob (tammy-pc)
Media Server
Sharepoint
File folder
Tammy (tammy-pc)
Media Server
Computer
10:26 PM
6/3/2012

From that point on, you can access the folder either by going through the Network folder as usual, or you can just open your Computer folder and open the resource's icon under Network Location.

NOTE

Even though a mapped network drive shows up as a disk drive in the Computer folder, a shared network resource need not be a disk drive at all. It can be a folder. The term "network drive" just refers to the fact that the shared resource "looks like" a drive, by virtue of the fact that it has a drive letter and icon in your Computer folder.

Disconnecting from a Network Drive

In your Computer folder, you can disconnect from any network drive by right-clicking the drive's icon and choosing Disconnect. If you chose the option Reconnect At Sign-In when you previously mapped the drive, the shared resource will no longer be mapped the next time you log on to the computer.

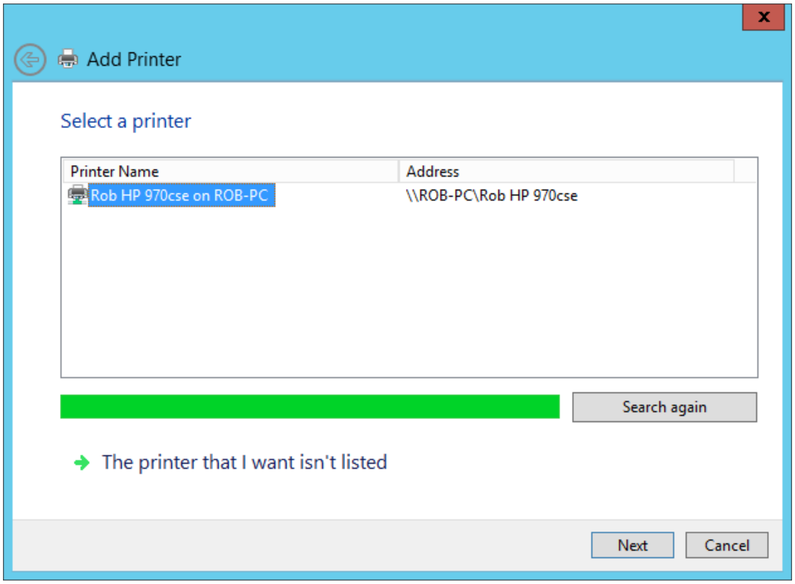
Using a Shared Printer

You use a shared printer from a remote computer exactly as you use a local printer. Choose File ➪ Print from the program's menu bar. When the Print dialog box opens, look for the shared printer, click it, and click the Print button.

If the shared printer doesn't show up in the Print dialog box, you can either add it right from the Print dialog box or you can install it from the Devices And Printers applet. To install it from the Devices And Printers Control Panel applet, click Add A Printer to open the Add Printer dialog box. Windows 8 automatically searches for all local and shared network printers and displays them in the Select A Printer dialog box (see Figure 51.7).

FIGURE 51.7

Windows 8 does a great job finding networked printers.


Add Printer
Select a printer
Printer Name
Address
Search again
The printer that I want isn't listed
Next
Cancel

Printer Name	Address
Rob HP 970cse on ROB-PC	\\ROB-PC\Rob HP 970cse

Select the printer you want to add to your list of printers and click Next. Windows 8 attempts to install the necessary printer driver for the networked printer. If it does not find one, you are shown a message that Windows could not find a driver. Click OK to manually specify where the necessary drivers are for the printer you want to set up.

After the drivers are installed, you return to the Devices And Printers folder. If that's the printer you'll use most often, make it the default printer as described in Chapter 32.

Whichever method you use to add the printer, after the printer is installed, choose File ➪ Print, select the newly installed printer, and click Print.

CAUTION

You can play shared media from a Windows 8 computer on any other Windows 8 computer in the network and on compatible networked digital media players.

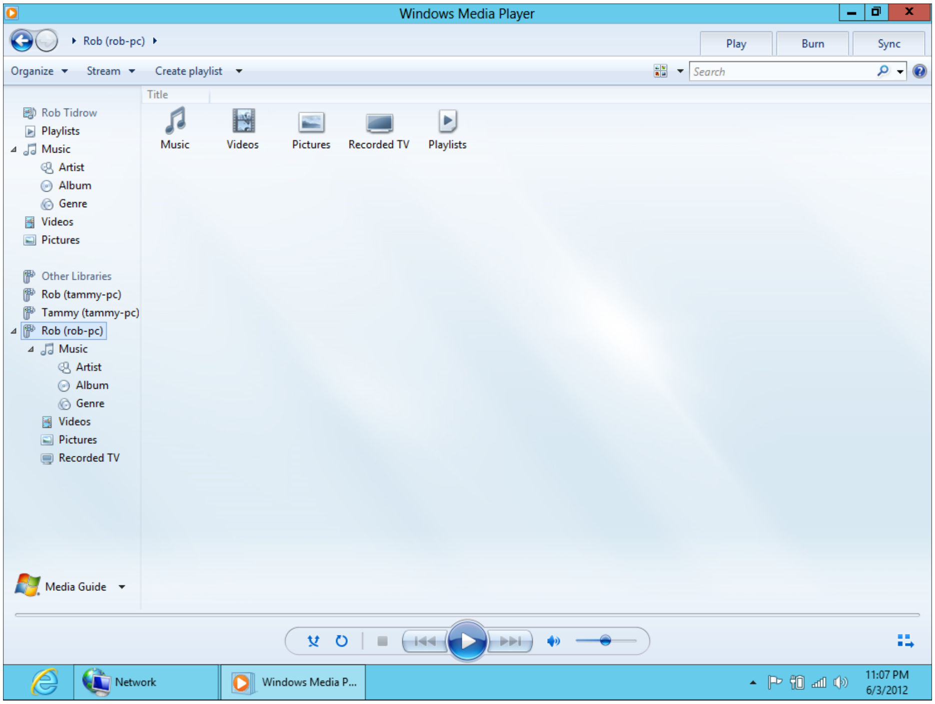
Using Shared Media

Shared media are different from shared files because they're *streamed* to the local computer when played. This allows you to play the media files on non-computer network devices such as the Xbox 360 or a networked digital media player. Exactly how you work such a device depends on the device. You'll need to refer to the instructions that came with the device for specifics. You also can use the new Windows 8 Xbox LIVE Games app from the Windows 8 interface to connect your Windows computer or tablet with a Microsoft Xbox device.

You can access the shared media by opening Windows Media Player normally. In the left pane, you should see each of the devices on the network that are sharing their media. Click the arrow next to a device to access its shared music, as shown in Figure 51.8.

FIGURE 51.8

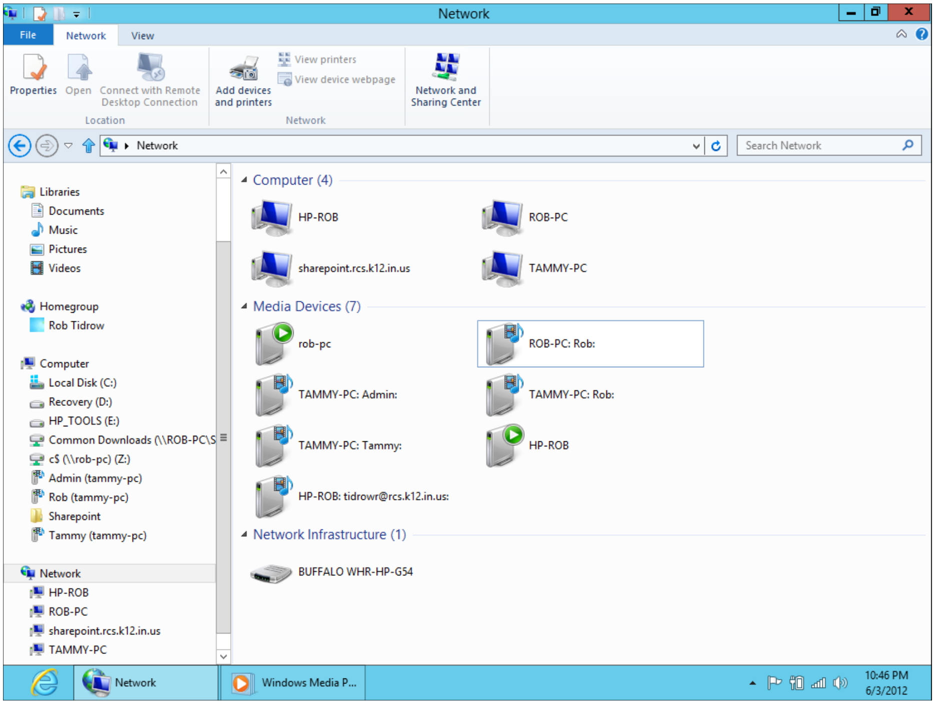
Accessing a remote shared library


Windows Media Player
Rob (rob-pc)
Play
Burn
Sync
Organize
Stream
Create playlist
Search
Title
Rob Tidrow
Playlists
Music
Artist
Album
Genre
Videos
Pictures
Other Libraries
Rob (tammy-pc)
Tammy (tammy-pc)
Rob (rob-pc)
Music
Artist
Album
Genre
Videos
Pictures
Recorded TV
Music
Videos
Pictures
Recorded TV
Playlists
Media Guide
Network
Windows Media P...
11:07 PM
6/3/2012

You can also browse for media devices (and computers that are sharing their music libraries) from the Network folder. When you open the Network folder, you'll see a section named Media Devices that shows all of the streaming media devices on the network (see Figure 51.9). Just double-click a device to open its library in Media Player.

FIGURE 51.9

Shared media in the Network folder


Network
File
Network
View
Properties
Open
Connect with Remote Desktop Connection
Location
Add devices and printers
View printers
View device webpage
Network
Network and Sharing Center
Network
Search Network
Libraries
Documents
Music
Pictures
Videos
Homegroup
Rob Tidrow
Computer
Local Disk (C:)
Recovery (D:)
HP_TOOLS (E:)
Common Downloads (\\ROB-PC\S
c$ (\\rob-pc) (Z:)
Admin (tammy-pc)
Rob (tammy-pc)
Sharepoint
Tammy (tammy-pc)
Network
HP-ROB
ROB-PC
sharepoint.rcs.k12.in.us
TAMMY-PC
Computer (4)
HP-ROB
ROB-PC
sharepoint.rcs.k12.in.us
TAMMY-PC
Media Devices (7)
rob-pc
ROB-PC: Rob:
TAMMY-PC: Admin:
TAMMY-PC: Rob:
TAMMY-PC: Tammy:
HP-ROB
HP-ROB: tidrowr@rcs.k12.in.us:
Network Infrastructure (1)
BUFFALO WHR-HP-G54
Network
Windows Media P...
10:46 PM
6/3/2012

For more information on using Windows Media Player, see Chapter 24, "Making Music with Media Player."

Wrap-Up

This chapter looked at ways to access shared network resources from computers in the same private network.

- To get to shared folders on other computers in the network, first open the Network folder on the computer at which you're sitting.
- To open a remote document from within a program, choose File ➪ Open from that program, as usual. Then, choose the Network folder from the Folders drop-down list in the Open dialog box.

- To save a document to a remote computer, choose File ➪ Save (or File ➪ Save As), and choose your Network folder from the Folders drop-down list.
- To create a Network Location link to an Internet site, right-click within your Computer folder and choose Add A Network Location.
- To move or copy files between computers in a network, use your Network folder to open the source and/or destination folders. Then, use the standard techniques described in Chapter 28, “Managing Files and Folders,” to select, move, or copy the files.
- To use a shared printer, print normally but select the shared printer’s name in the Print dialog box.
- If you don’t see a shared printer in the Print dialog box, install the printer on the local computer using techniques described in Chapter 32, “Installing and Managing Printers.”
- To play shared media using Windows Media Player, open the Network folder and double-click the shared media’s icon.

CHAPTER

52

Troubleshooting Networks

IN THIS CHAPTER

Troubleshooting a wired network

Troubleshooting a wireless network

Troubleshooting network printer connections

Networking has considerably improved with each new version of Windows, so you should experience fewer networking problems with Windows 8. However, Windows is just a part of the equation. Problems can occur with networking hardware, whether on your computer or elsewhere on the network. When that happens, you can use several troubleshooting techniques to identify and fix the problem. This chapter explores these techniques.

Letting Windows Troubleshoot the Network

Whenever you have a problem with a network, whether wired or wireless, you should always check your network hardware first. Even experts have been known to spend much time trying to troubleshoot a network problem from mouse and keyboard, when the problem turned out to be a loose cable.

If on a wired network, make sure the computer is firmly connected to the hub using an appropriate cable. For example, if you're using gigabit Ethernet, use Cat 6 straight through cables (not crossover cables) to connect all computers to the hub. Make sure each cable is firmly plugged in. If the hub and cards have indicator lights, they should be green when the computer is properly connected. The amber light flashes only when there's data crossing the cable.

TIP

How can you tell a straight cable from a crossover cable? Hold the two ends of the cable side-by-side, with the retaining clip facing away from you. The colors will be in the same order left-to-right on both connectors on a straight cable. A crossover cable will have the green and orange wires (network cable has a series of eight colored wires) switched on one end of the wire.

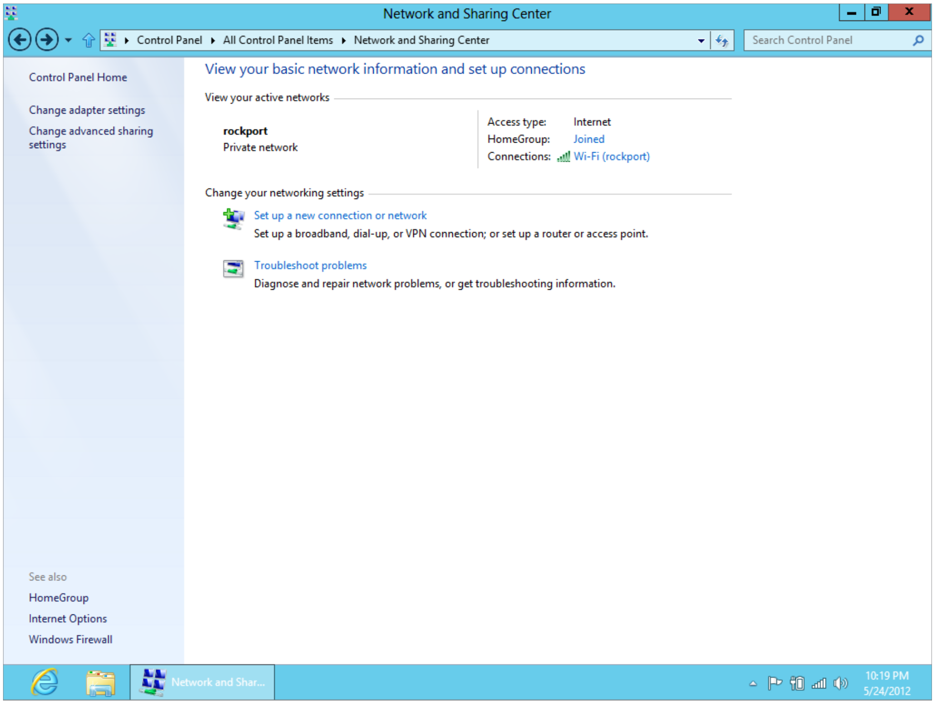
For a wireless network, make sure the wireless access point is turned on and its connection to the wired segment (such as the switch, or DSL or cable modem) is active. Always refer to the installation and troubleshooting documentation that came with your networking hardware. Remember that not all products are exactly alike. You have to understand and properly install whatever network hardware you've purchased. Windows 8 can only use that hardware for networking if it's properly installed and working correctly.

If you're confident that the hardware is working properly, then you can use several techniques to help with troubleshooting. For example, Windows can perform some automated troubleshooting. Here's how to start the process:

1. On the desktop, press Windows+X to display the Windows power menu. Click the Control Panel menu option. If the Control Panel is in Category view, select View Network Status And Tasks under Network And Internet. If the Control Panel is in Classic view, click Network And Sharing Center.
2. Click Troubleshoot Problems at the bottom of the window (see Figure 52.1).

FIGURE 52.1

Network And Sharing Center


Network and Sharing Center
Control Panel ▸ All Control Panel Items ▸ Network and Sharing Center
Search Control Panel
Control Panel Home
Change adapter settings
Change advanced sharing settings
See also
HomeGroup
Internet Options
Windows Firewall
Network and Shar...
10:19 PM
5/24/2012

View your basic network information and set up connections

View your active networks

rockport
Private network

Access type: Internet
HomeGroup: Joined
Connections: Wi-Fi (rockport)

Change your networking settings

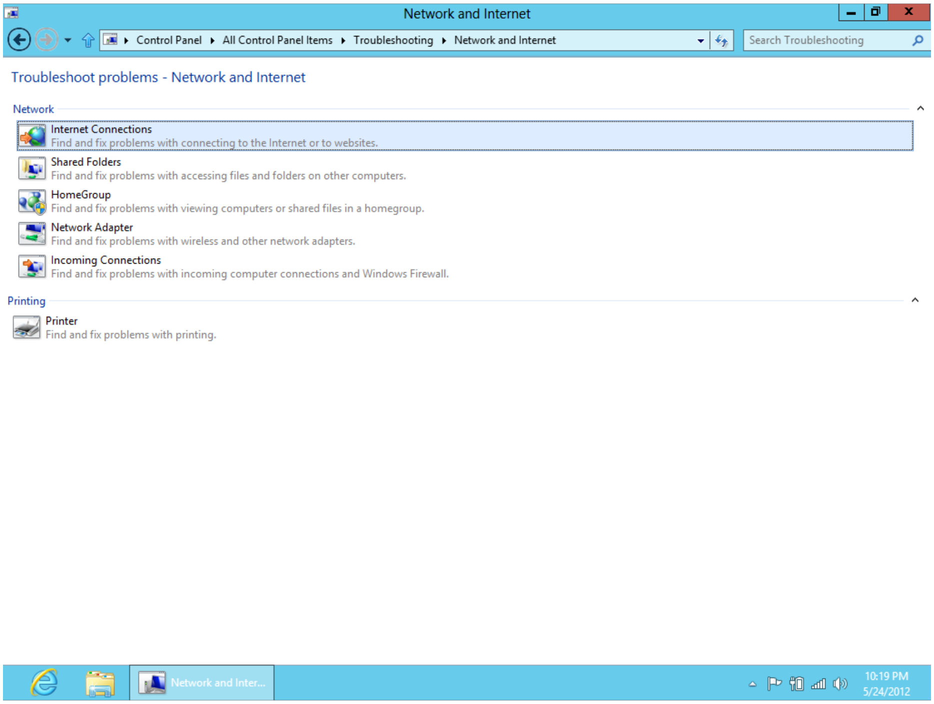
Set up a new connection or network
Set up a broadband, dial-up, or VPN connection; or set up a router or access point.

Troubleshoot problems
Diagnose and repair network problems, or get troubleshooting information.

3. After you select Troubleshoot Problems, Windows searches for troubleshooting packs, which enable it to troubleshoot specific types of problems. Figure 52.2 shows the list of troubleshooters.
4. Locate and click the troubleshooter that you believe is related to the problem your computer is experiencing. Windows 8 opens a troubleshooting wizard. Click Next to allow the wizard to attempt to resolve the problem.

FIGURE 52.2

Windows offers several network troubleshooters


Network and Internet
Control Panel ▸ All Control Panel Items ▸ Troubleshooting ▸ Network and Internet
Search Troubleshooting
Network and Inter...
10:19 PM
5/24/2012

Troubleshoot problems - Network and Internet

Network

Internet Connections
Find and fix problems with connecting to the Internet or to websites.

Shared Folders
Find and fix problems with accessing files and folders on other computers.

HomeGroup
Find and fix problems with viewing computers or shared files in a homegroup.

Network Adapter
Find and fix problems with wireless and other network adapters.

Incoming Connections
Find and fix problems with incoming computer connections and Windows Firewall.

Printing

Printer
Find and fix problems with printing.

With any luck, the diagnostics will solve the problem for you. If not, you can take some general steps to troubleshoot the problem yourself.

Manual Troubleshooting

If you are troubleshooting a wired network connection, make sure you have verified that all cables are securely connected and that you see link lights on both ends of the connection (at the computer and at the hub). Also, make sure the hub (or a switch that is acting as a hub) is powered on, and for an Internet connection, that the connection for the Internet connection is plugged into the hub.

The following are the two most common problems with wireless networking:

- The computer from which you're working is too far away from the router or access point.
- The hardware isn't properly configured, as per the manufacturer's instructions.

A Common Network Problem

A common reason for connection problems when connecting to another system on your network is the Windows Firewall. By default, Windows does not allow sharing between two computers. This is something that you need to enable within the Windows Firewall.

To enable file sharing, open the Control Panel. If the Control Panel is in Category view, you'll need to click System And Security and then click Windows Firewall. If the Control Panel is in Classic view, you'll need to double-click Windows Firewall. Leave the firewall On and click the Allow An App Or Feature Through Windows Firewall link. Click Change Settings to enable the controls on the Allowed Programs dialog box. Then, select (check) File And Printer Sharing and place a check beside the network where you want to enable sharing (Private, Public, or both). Then, click OK.

Always check the troubleshooting material in the hardware manufacturer's documentation first. When you're confident that the computer is in range and the hardware is set up properly, use the network troubleshooters as described earlier in this chapter to troubleshoot the problem.

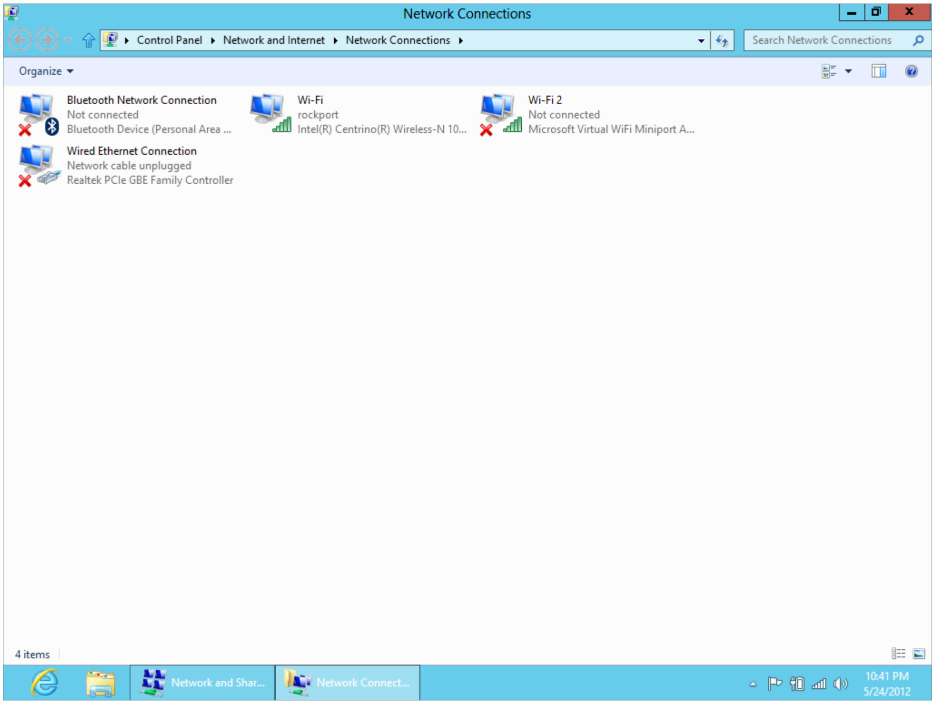
If Windows is unable to identify and fix the problem with your network, you can use various tools and techniques to manually test the network. The following sections explore these techniques and tools.

Troubleshooting a specific connection

To troubleshoot a specific connection, open the Control Panel and click View Network Status And Tasks under the Network And Internet heading. In the resulting Network And Sharing Center, click Change Adapter Settings in the left pane. Windows 8 then displays the computer's network connections (see Figure 52.3). To troubleshoot and repair a connection, right-click the connection and choose Diagnose.

FIGURE 52.3

Network Connections


Network Connections
Control Panel ▸ Network and Internet ▸ Network Connections ▸
Search Network Connections
Organize ▾
4 items
Network and Shar...
Network Connect...
10:41 PM
5/24/2012

Bluetooth Network Connection
Not connected
Bluetooth Device (Personal Area ...

Wi-Fi
rockport
Intel(R) Centrino(R) Wireless-N 10...

Wi-Fi 2
Not connected
Microsoft Virtual WiFi Miniport A...

Wired Ethernet Connection
Network cable unplugged
Realtek PCIe GBE Family Controller

If the connection is still not working as expected, you can perform a few tests from a command console to isolate the problem.

Testing from a command console

A handful of command-line tools are available for troubleshooting network issues. To open the command console, press Windows+X and click Command Prompt. The Command Prompt window opens.

The first command to try is the `ping` command.

ping

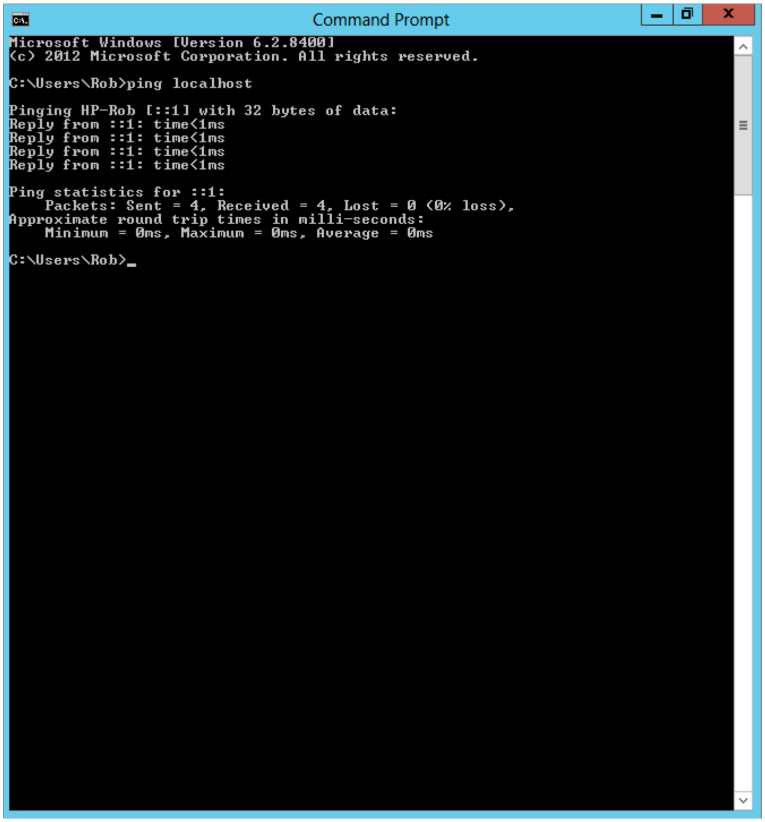
`ping` sends test packets to an IP address that you specify, and if the connection is working, returns a reply. By default, `ping` sends four test packets to the specified address, but you can specify the number of requests to send or have `ping` continue sending until you stop it.

To troubleshoot using the `ping` command, first ping your local computer using the `ping localhost` command.

You should receive four replies, as shown in Figure 52.4. If not, there is an issue with the configuration of your network adapter, and you need to troubleshoot and/or repair that connection before testing further.

FIGURE 52.4

ping command



```
Microsoft Windows [Version 6.2.8400]
(c) 2012 Microsoft Corporation. All rights reserved.

C:\Users\Rob>ping localhost

Pinging HP-Rob [::1] with 32 bytes of data:
Reply from ::1: time<1ms
Reply from ::1: time<1ms
Reply from ::1: time<1ms
Reply from ::1: time<1ms

Ping statistics for ::1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Rob>_
```

If you do get four replies when pinging localhost, try pinging past your own computer. For example, if you are troubleshooting an Internet connection, ping the IP address of your gateway. If you are using a wireless connection, ping the IP address of your wireless access point. On a wired network, ping the router. Work your way out from your computer, pinging successively further until you identify where the packets are dying. For example, if you can ping your gateway but no further, the problem likely lies with your Internet provider.

NOTE

Bear in mind that `ping` failures do not necessarily mean a problem at the device you're pinging. For example, if your gateway device is configured to drop ping packets, you won't receive a response.

tracert

Another command you can use to troubleshoot a network connection is `tracert`. This command traces the route to a specified address, and is useful for identifying a point of failure in your connection. For example, if you perform a `tracert` to a public Internet server, but `tracert` fails at your gateway, you probably have a problem with the gateway device. If `tracert` fails at a location on the Internet (or on your ISP's network), the issue is not with your network.

To use `tracert`, open a command prompt and execute the `tracert (`*`address`*`)` command. `(`*`address`*`)` is the address or host name of the device to which you want to trace. As with `ping`, a failure at a certain point doesn't necessarily indicate that point is the source of the problem because the device could simply be dropping that traffic. However, if you can successfully return packets from beyond your own network, you have validated that your network is functioning properly.

TIP

The `tracert` command can be useful in identifying a point in the path with high latency (a point where response is slow).

The following is a sample output from the `tracert` command:

```
C:\Users\tid.000>tracert www.irs.gov


Tracing route to a321.g.akamai.net [201.245.162.56]
over a maximum of 30 hops:

  1    18 ms     1 ms     1 ms  192.168.2.1
  2     *        *        *     Request timed out.
  3     *        *        *     Request timed out.
  4    98 ms    78 ms    81 ms  ip-69-160-196-57-static.indianafiber
                                .net [69.160.196.57]
  5   116 ms   144 ms    79 ms  69.160.211.25
  6    88 ms   127 ms    96 ms  xe-10-3-0.bar2.Cincinnati1.Level3
                                .net [4.59.42.17]
  7   103 ms    82 ms   102 ms  ae-0-11.bar1.Cincinnati1.Level3.net
                                [4.69.136.209]
  8    74 ms   112 ms   102 ms  ae-10-10.ebr2.Chicago1.Level3.net
                                [4.69.136.214]
  9    92 ms   106 ms   112 ms  ae-5-5.ebr2.Chicago2.Level3.net
                                [4.69.140.194]
 10   114 ms    94 ms    84 ms  ae-2-52.edge4.Chicago3.Level3.net
                                [4.69.138.166]
 11    89 ms   133 ms   111 ms  verio-ntt-level3-10ge.Chicago3.Level3
                                .net [4.68.63.198]
 12   139 ms    91 ms    94 ms  ae-7.r20.chcgil09.us.bb.gin.ntt.net
                                [129.250.4.145]
 13   148 ms   198 ms   148 ms  ae-4.r23.nycmny01.us.bb.gin.ntt.net
                                [129.250.2.41]
 14   128 ms   132 ms   112 ms  ae-1.r20.asbnva02.us.bb.gin.ntt.net
                                [129.250.2.9]
 15   139 ms   144 ms   129 ms  ae-1.r00.asbnva02.us.bb.gin.ntt.net
                                [129.250.3.110]
 16   138 ms   132 ms   112 ms  a204-245-162-56.deploy.akamai
                                technologies.com [204.245.162.56]

Trace complete.
```

ipconfig

The `ipconfig` command displays network configuration and is particularly useful for viewing your TCP/IP settings, such as IP address, DNS server addresses, and gateway. To view the configuration for your interface, use the `ipconfig /all` command.

Windows displays the configuration for all network adapters, similar to the following listing:

```
C:\Users\tid.000>ipconfig /all

Windows IP Configuration

   Host Name . . . . . . . . . . . . : HPFolio
   Primary Dns Suffix  . . . . . . . :
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : No
   WINS Proxy Enabled. . . . . . . . : No
   DNS Suffix Search List. . . . . . : Belkin

Wireless LAN adapter Wi-Fi 2:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Microsoft Virtual WiFi
                                       Miniport Adapter
   Physical Address. . . . . . . . . : 4C-EB-42-97-78-DC
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes

Ethernet adapter Bluetooth Network Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Bluetooth Device (Personal
                                       Area Network)
   Physical Address. . . . . . . . . : 4C-EB-42-97-78-DF
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes

Wireless LAN adapter Wi-Fi:

   Connection-specific DNS Suffix  . : Belkin
   Description . . . . . . . . . . . : Intel(R) Centrino(R)
                                       Wireless-N 1030
   Physical Address. . . . . . . . . : 4C-EB-42-97-78-DB
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::e5dc:7420:b809:7805%13
                                       (Preferred)
   IPv4 Address. . . . . . . . . . . : 192.168.2.3(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Thursday, May 24, 2012
                                       9:49:12 PM
   Lease Expires . . . . . . . . . . : Monday, July 01, 2148
                                       5:33:08 AM
   Default Gateway . . . . . . . . . : 192.168.2.1
   DHCP Server . . . . . . . . . . . : 192.168.2.1
   DHCPv6 IAID . . . . . . . . . . . : 223144770
   DHCPv6 Client DUID. . . . . . . . : 00-01-00-01-17-3C-87-67-AC-16-
                                       2D-46-6F-84
   DNS Servers . . . . . . . . . . . : 192.168.2.1
   NetBIOS over Tcpip. . . . . . . . : Enabled

Ethernet adapter Wired Ethernet Connection:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Realtek PCIe GBE Family
                                       Controller
   Physical Address. . . . . . . . . : AC-16-2D-46-6F-84
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes

Tunnel adapter isatap.Belkin:
   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . : Belkin
   Description . . . . . . . . . . . : Microsoft ISATAP Adapter
   Physical Address. . . . . . . . . : 00-00-00-00-00-00-00-E0
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes

Tunnel adapter Teredo Tunneling Pseudo-Interface:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Teredo Tunneling Pseudo-
                                       Interface
   Physical Address. . . . . . . . . : 00-00-00-00-00-00-00-E0
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes
   IPv6 Address. . . . . . . . . . . : 2001:0:4137:9e76:3c27:2331:
                                       2f98:c081(Preferred)
   Link-local IPv6 Address . . . . . : fe80::3c27:2331:2f98:c081%17
                                       (Preferred)
   Default Gateway . . . . . . . . . : ::
   NetBIOS over Tcpip. . . . . . . . : Disabled
```

In addition to showing you the configuration of your computer's network interfaces, `ipconfig` can also renew a DHCP address lease. If your connection failed to obtain an IP address, force another attempt with the `ipconfig /renew` command.

You can also use `ipconfig` to flush the DNS resolver cache. Each time you try to access a network resource by its hostname, such as `www.wiley.com`, the DNS resolver on your computer attempts to resolve the hostname to its IP address. The resolver first looks in the local cache for the host, and if it finds the entry there, returns the results without attempting an external DNS query. However, if the entry is not in the cache, the DNS resolver queries your DNS server(s) for the results.

In addition to caching positive results, Windows 8 also caches negative results. So, if you attempted to connect to a resource and the query failed to return results, the resolver won't attempt to query DNS again until the previous query becomes stale. You can clear out the cache to remove all results, which causes the DNS resolver to query the DNS servers again for the results. Use the `ipconfig /flushdns` command to flush the resolver cache.

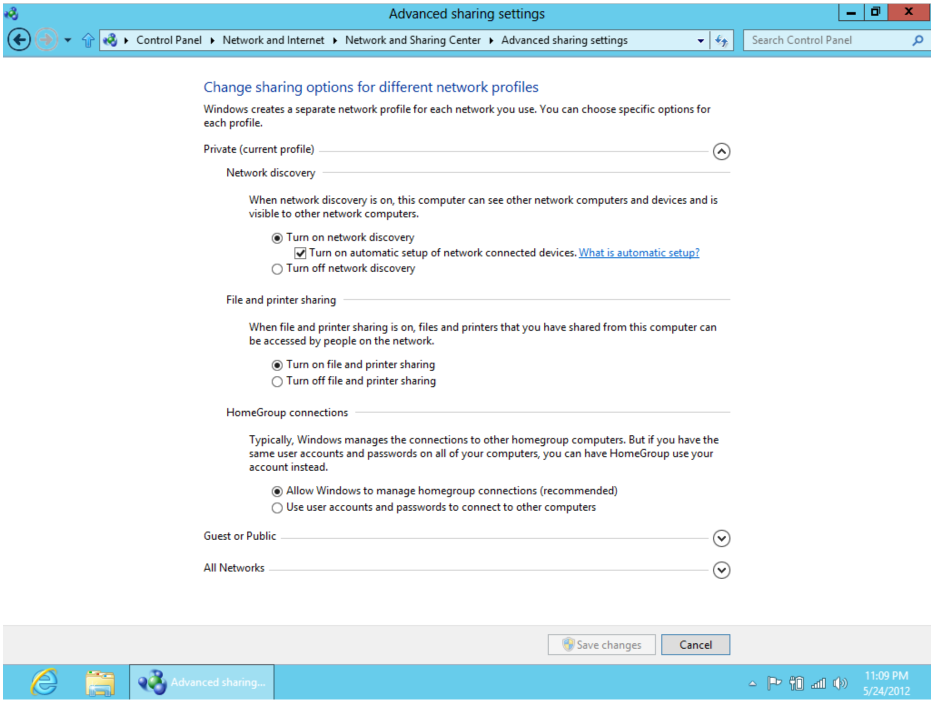
Troubleshooting Network Printer Connections

If you're unable to locate a printer on your network, you should first make sure that the printer is shared correctly off of the remote system. First, verify that you can print when you are sitting at the computer connected directly to the printer. When you're able to print from the computer connected to the printer, you need to verify that print sharing is enabled. To do this, follow these steps:

1. Open the Control Panel. If the Control Panel is in Category view, click View Network Status And Tasks under Network And Internet. If the Control Panel is in Classic view, choose Network And Sharing Center.
2. When the Network And Sharing Center window opens, click Change Advanced Sharing Settings in the left pane to show Advanced Sharing Settings, as shown in Figure 52.5.
3. Choose the option Turn On File And Printer Sharing, and click Save Changes.
4. Open the Control Panel and click Devices And Printers under the Hardware And Sound category. Double-click the printer you want to share.
5. In the printer's window that opens, double-click Customize Your Printer to open the properties for the printer.
6. Click the Sharing tab and verify that the Share This Printer check box is selected, and click OK.

FIGURE 52.5

Configuration for sharing a printer


Advanced sharing settings
Control Panel ▸ Network and Internet ▸ Network and Sharing Center ▸ Advanced sharing settings
Search Control Panel
Save changes
Cancel
Advanced sharing...
11:09 PM
5/24/2012

Change sharing options for different network profiles

Windows creates a separate network profile for each network you use. You can choose specific options for each profile.

Private (current profile)

Network discovery

When network discovery is on, this computer can see other network computers and devices and is visible to other network computers.

● Turn on network discovery
  ☑ Turn on automatic setup of network connected devices. What is automatic setup?
○ Turn off network discovery

File and printer sharing

When file and printer sharing is on, files and printers that you have shared from this computer can be accessed by people on the network.

● Turn on file and printer sharing
○ Turn off file and printer sharing

HomeGroup connections

Typically, Windows manages the connections to other homegroup computers. But if you have the same user accounts and passwords on all of your computers, you can have HomeGroup use your account instead.

● Allow Windows to manage homegroup connections (recommended)
○ Use user accounts and passwords to connect to other computers

Guest or Public

All Networks

After you have verified that the printer has been shared correctly, move to the computer from which you are trying to connect. Open Network And Internet from the Control Panel, and click View Network Computers And Devices. Double-click the remote computer and then the printer to which you are trying to connect. You can double-click the printer to install it on your system.

Use All Available Resources

As mentioned, you always want to check the most obvious things first (network cables, or making sure you're within range on a wireless network). Links in the left pane of the Network And Sharing Center, as well as the troubleshooting link at the bottom, can provide First Aid help after you've eliminated the more obvious suspects as the source of the problem.

Finally, don't forget the Microsoft Answers website at `http://answers.microsoft.com`. Chances are, someone in this area has already experienced and resolved the very problem you're experiencing. Ask questions about Windows 8 networking, sharing devices, or other similar topic to locate answers that may help you.

Wrap-Up

Problems can occur with networking hardware, whether on your computer or elsewhere on the network. When that happens, you can use several troubleshooting techniques to identify and fix the problem. This chapter explored the following techniques:

- Letting Windows troubleshoot problems with your network connections.
- Looking for ways to manually troubleshoot network problems.
- Troubleshooting specific connection problems.
- Finding solutions with network printer errors.
- Locating online resources that can help you fix network problems.

Part XI

Appendixes

IN THIS PART

Appendix A
Upgrading to Windows 8

Appendix B
Installing Windows 8 on a New System

Appendix C
Universal Shortcut Keys

Appendix D
Metro Gestures

APPENDIX

A

Upgrading to Windows 8

IN THIS APPENDIX

Windows 8 system requirements

Pre-installation housekeeping

Installing Windows 8

If you purchased your PC with Windows 8 already installed and have no interest in dual-booting, you need to hang a U-turn. There's nothing in this appendix for you. Go straight to the Introduction, or Chapter 1, at the beginning of this book, and forget all about this appendix.

If you purchased an upgrade version of Windows 8 to replace your current version of Windows and you haven't yet installed that upgrade, this is the place to be. To tell you the truth, you really don't have to read this entire appendix to install your upgrade. You really just have to do this:

1. Insert the disc that came with your Windows 8 upgrade into your computer's disc drive and wait a few seconds.
2. Follow the instructions that appear on the screen to install Windows 8 by upgrading your current version of Windows.

When the installation is complete, remove the new disc from your disc drive, put it someplace safe, and ignore the rest of this appendix. If these two steps don't quite get the job done, please read on.

There is one point that we need to stress. It's important that you know that Windows 8 can upgrade only from Windows 7 and no versions of Windows before it.

Windows 8 System Requirements

Windows 8 has the same hardware requirements as Windows 7 and Windows Vista, but requires a bit more hardware horsepower than versions of Windows prior to 7. The more hardware capability you have, the better Windows 8 will run. The recommended minimum hardware requirements are as follows:

- 1GB of RAM for 32-bit (x86) versions; 2GB of RAM for 64-bit (x64) versions.
- A 1.0 Gigahertz (GHz) 32-bit (x86) or 64-bit (x64) processor.
- At least 16GB free space available for 32-bit (x86) versions; 20GB for 64-bit (x64) versions.
- DirectX 9–capable GPU with WDDM 1.0 driver or higher.
- Screen resolution of at least 1024 × 768 for Windows 8 apps.
- For the Snap feature to work, your screen resolution must be set to a minimum of 1366 × 768.

When you run the installation program for Windows 8, it automatically runs the Windows 8 Installation Compatibility Advisor tool on your computer. This tool tests to ensure your computer meets minimum requirements for Windows 8. It also checks many of your installed programs to see if there are any known problems with those programs running with Windows 8.

Pre-Installation Housekeeping

If you've been using your PC for a while with an earlier version of Windows, you'll want to do some things before you begin your upgrade:

- If your computer has any time-out features, such as the power-down features found on some portable PCs, disable those features now.
- If you have an antivirus program handy, run it now to check for, and delete, dormant viruses that may still be lurking on your hard drive.
- Disable your antivirus software after you've run the check. Leave it disabled until after you've completed the upgrade.
- Make sure that any external devices (printers, external disk drives, and so on) are connected and turned on so that Windows 8 can detect them during installation.
- If at all possible, back up the entire hard drive at this point. At the very least, jot down all the information you need to connect to your Internet account. Back up all your documents, e-mail messages, names and addresses, and anything else you'll need after you complete the upgrade.

We realize that few people outside the corporate world have a means of backing up their entire hard drive. But you should be able to at least back up documents, e-mail messages, names and addresses, and so forth. Windows 8 includes Windows Easy Transfer that fills that need. See Chapter 14, "Transferring Files from Another Computer," for information on Easy Transfer.

See Chapter 31, "Protecting Your Files," for some general pointers on backing up documents.

Installing Windows 8

To upgrade an existing version of Windows 7, start your computer normally. You'd do well to restart the computer and get to a clean desktop with no open program windows or dialog boxes. Then put the Windows 8 disc in your disc drive and wait for the Welcome screen to open. If nothing appears on the screen within a minute or so, follow these steps:

1. Open Computer.
2. Open the icon for your disc drive. If the Welcome screen opens, skip the next step.
3. Click (or double-click) the setup (or `setup.exe`) file on the disc.

By now, you should definitely see on your screen some options for installing Windows 8. To get things rolling:

1. Choose the Install Now option.
2. When the Get Important Updates For Installation window appears, you're able to go online to get the latest updates for your installation of Windows 8. If you choose this option, your system needs to stay connected throughout the installation.

Before clicking Install, you can use Windows Easy Transfer, an application included with Windows 8, for copying your files and settings to a different computer. See Chapter 14, "Transferring Files from Another Computer," for more information on Easy Transfer.

The installation procedure begins. You might notice that the screen goes blank once in a while during the installation. Don't be alarmed; that's normal. If the screen goes blank for a long time, try moving the mouse around a bit to bring it back. From here on out, you can just follow the instructions on the screen.

Installation options

The exact procedure from this point on varies a bit, depending on what version of Windows 8 you're installing. Also, the specific hardware that's connected to your computer affects the information that the setup procedure requests. Each request is largely self-explanatory, but here's a summary of the items you're likely to encounter along the way.

- **Get updates:** During the upgrade process, you can instruct Windows 8 to download and install any updates that Microsoft has released. You need to have an Internet connection for this to take place.
- **Product key:** Type the product key. You should be able to find it on the sleeve in which the Windows 8 disc was delivered.
- **License terms:** If you agree with the terms and conditions of the license, select the I Accept the License Terms check box.
- **Upgrade or custom installation:** If you decide that you want to do a fresh installation, choose the Custom option. This will not keep your personal files and programs. The Upgrade option will.
- **Date and time settings:** Set the date and current time, choose your time zone, and decide whether you want Windows to automatically adjust the time for daylight savings changes.

Reenabling old startup programs

You may discover that some of the programs that used to start automatically on your computer don't do so after you've installed Windows 8. You can follow these steps to get those programs to start automatically again in the future:

1. Move the mouse to the top-right edge of the screen to show the Charms Bar. Click Search, type **Task Manager**, and click Task Manager on the Apps screen. This runs the Task Manager tool.
2. Click the Startup tab.
3. Right-click a program that shows Disabled in the Status column and click Enable. Or click a program that shows Disabled in the Status column and click the Enable button at the bottom of the Task Manager window.
4. Choose File ➪ Exit to close the Task Manager.

Windows 8 should restart with the programs from your previous version of Windows.

APPENDIX

B

Installing Windows 8 on a New System

IN THIS APPENDIX

- Gearing up for a clean installation
- Doing the clean installation
- Completing the installation

If you've just built a new computer from scratch, or if you've replaced your old drive C: with a new hard drive, you will have to do a *clean install* of Windows 8. From a purely technological standpoint, this is really your best option. You don't have to bring any of the old "baggage" with you, but therein lies an issue.

You can opt to do a clean install even if you already have a version of Windows installed on the hard drive; however, you must realize that doing so is *very* serious business. When you do a clean install, you wipe out everything on your hard drive. And we do mean *everything* — all programs, documents, settings, Internet account information — everything. There's no getting *any* of that stuff back, either. Just to make sure nobody misses this important fact, let us say it with a big Caution.

CAUTION

The procedures described in this chapter are for advanced users only. You should know your hardware; your system's BIOS setup, all your Internet account information; how to export, back up, and restore messages, contacts, favorites, and the like; and how to find technical information about your hardware components on your own before attempting any of the techniques described in this chapter. Don't confuse a "clean install" with a "clean boot."

Gearing Up for a Clean Install

Most experts prefer to do a clean install when they upgrade to a new version of Windows, largely because it gets everything off to a clean start. Besides, it's a great excuse for upgrading to a bigger and faster hard drive. You can use your original hard drive as a second hard drive and easily transfer documents from that drive to the new drive after you've installed Windows 8 on the new drive. However, you'll still need to reinstall all your programs and redo all your settings after you complete the installation.

Back up all your data

If you intend to keep your existing C: as the C: drive after the clean install, it's important that you understand that you will permanently lose everything on that drive during the clean install. Therefore, you should:

- Write down all of your Internet connection data so that you can reestablish your account after the clean install.
- Back up or export all your e-mail messages, names and addresses, Internet favorites, and anything else you'll want after the clean install so that you can recover them. Remember, whatever you don't save will be lost forever. However, this does not apply for web-based e-mail accounts that do not store messages on your computer.
- Back up all your documents because each and every one of them will be wiped out along with Windows and all your programs.

CAUTION

A clean install permanently erases everything on your hard drive, which is basically everything that's "in your computer." Users who do not fully understand the ramifications of this should not attempt to do a clean install of Windows 8 or any other operating system. It's extremely difficult to recover data from an erased drive, but if you need that kind of help, you can turn to a data recovery service such as DriverSavers (`www.drivesaversdatarecovery.com`).

If Windows is currently installed on the C: drive you intend to reuse, you can use the Windows Easy Transfer to back up all your documents and settings, as covered in Chapter 14, "Transferring Files from Another Computer." Ideally, you want to back up the data to another computer in the network. Windows Easy Transfer allows you to transfer files and folders, e-mail settings, and many other personal items from your existing computer to the new computer or hard drive. You can do this by using a USB Easy Transfer cable, the network, DVDs or CDs, or external USB devices.

Given that hard drives are so inexpensive these days, it almost seems a shame *not* to start the clean install from a new hard drive. You don't have to worry about losing any data from the old drive if you do a clean install of Windows 8 to a new drive. The data from your old drive will stay intact because Windows will be installed on the new drive.

Make sure that you can boot from your DVD

By far, the easiest way to do a clean install on a new drive is to boot from the Windows 8 disc. You'll want to make sure that you *can* do this before you do anything inside the computer. Most discs aren't bootable, so you need to insert the Windows disc into the drive and restart the computer. Watch for a message that says, "Press any key to boot from CD or DVD countdown," and tap the Spacebar before the countdown runs out. (In case you're curious, it's five seconds.)

If you see a message that tells you that Windows is loading files, you know you can boot from a disc. Press Ctrl+Alt+Del to reboot before setup actually starts and remove the disc from the drive while the system is rebooting. Then, shut down the PC altogether.

If you can't boot the system from the Windows disc, you need to adjust your BIOS settings. Again, this isn't something we can tell you how to do specifically because it depends on your system's BIOS. But the usual scenario is to press F2 or Del as the computer is starting up to get to your BIOS setup. After you get into the BIOS settings, make sure that booting from the disc drive is enabled and that the disc drive has a higher priority than the hard drive.

If you'd rather not adjust your BIOS settings, many computers give you the option to select the boot device. Pressing a key during the startup process tells the BIOS that you want to select your boot device this one time. It can be the F10, F11, or F12 key, but you'll want to check your computer's documentation to find out which key it actually is.

If you do opt to change the BIOS settings, put the Windows disc back into the disc drive, save your BIOS settings, and exit so that the computer reboots again. If you got it right, you should see a message that tells you Windows is loading files again on restart, indicating that you've successfully booted from the disc. Cancel that startup as well, by pressing Ctrl+Alt+Del, and remove the disc from the drive before the computer gets another chance to boot from the disc.

Installing a new C: drive

If you're upgrading your C: drive along with your version of Windows, the first step is to hide existing hard drives from the system altogether so that, to the BIOS, the new drive appears to be the only hard drive in the system. Simply disconnecting the power and interface plugs from the backs of the drives will do the trick.

CAUTION

Never do anything inside your system case while the computer is turned on or even plugged into a power outlet. Wear an antistatic wrist strap to prevent static discharge from wiping out components and the warranties that go with them!

The next step involves getting the new drive installed to the point at which it's at least recognized by the BIOS. We can't tell you how to do that because the procedure varies from one drive manufacturer to the next. You must follow the instructions that came with the drive, or the instructions on the drive manufacturer's website, to get to the point at which the system recognizes that drive at startup.

Chances are, the drive manufacturer's instructions will include steps to partition and format the drive. You should probably do so even if you intend to repartition and reformat the drive during the Windows 8 clean installation. You still won't be able to boot from the drive, but at least the drive will be recognized as C: during the Windows installation.

It's also important to note which connection architecture your system uses, which determines how the drive plugs into the motherboard. The vast majority of new systems today use a Serial ATA (or SATA) interface. Systems from a couple of years ago used both SATA and the older Parallel ATA (or PATA). SATA cables are thin and have plastic connector tips, somewhat like USB. PATA cables are wide and flat and the connector blocks have two rows of holes.

The other part of the installation requires knowing how the drive will be powered. If you have a laptop, you need a 1.8-inch or 2.5-inch drive, and it will be bus powered. Desktop drives will either have the older Molex (white-tipped) power adapters or the newer, more common, black- or red-tipped SATA power tips. Most systems have both Molex and SATA power adapters inside, but you need to pay close attention to the power that the drive needs. Some SATA drives come with Molex power ports, and you can find Molex-to-SATA–type adapters online or in certain PC stores.

If you intend to handle the hard drive installation on your own, you need to become familiar with these interfaces and make sure that you get the correct drive to support it.

Doing the Clean Install

When you feel confident that you'll be able to get back everything you want from your hard drive, you're ready to start the clean install. Put the Windows disc in the disc drive and shut down the computer. Then, restart the computer and boot from the disc. Your system's screen will go blank with a progress bar across the bottom of the screen while it copies some setup files. After the copy, the screen will change to a blue and green background, and you'll be given a mouse pointer. Follow these steps to continue the installation:

1. At the Install Windows dialog box, select the Language, Time, and Currency format and the type of keyboard; then click the Next button.
2. Click the Install Now link, and you'll be prompted for the product key. After entering the product key, click the Next button.
3. If you accept the license terms, select the I Accept The License Terms box and click the Next button.

4. Select the Custom: Install Windows Only (Advanced) option to continue.
5. The next dialog box lists all the drives and partitions that the installation application sees on your system. Select the partition on which you want to install Windows 8 and click Next.

   If you don't see your drive, the controller your hard drive is connected to might require a special driver that the installation application doesn't know about. You can click the Load Driver link to load the driver provided by the controller's manufacturer. Clicking the Drive Options (Advanced) link enables the option to format the drive before installing Windows 8. Select the partition on which Windows 8 will be installed and click the Format link. The installation application will prompt that the data on the drive will be erased and permanently deleted. Click OK as long as you are sure that your database has been saved elsewhere.
6. After the drive is formatted, the Total Size and Free Space columns will be almost identical. Don't worry about any discrepancies. They are a result of how file systems and the formatting process works. Click the Next button to continue. At this point, the installation application will start copying files.

The Rest of the Installation

Copying the files and installing them to your system takes some time. When the installation continues, follow these steps:

1. You can change the color of the main screen from blue to one you prefer more.
2. Type a name for your computer. You should make it unique in your environment. For example, if you have multiple computers in your home and they are connected to one another by a network (such as a Windows homegroup), make sure you name this computer something different than all your other computers. Click Next.
3. Click Use Express Settings.
4. You are prompted to set up a sign-on name for your computer, which creates a Microsoft account for you. Use an existing e-mail address. Click Next. (Click the Sign Up For A New Email Address link if you need to set up an e-mail account right now.) In our example, we assume you have an account already.
5. Enter your Microsoft account password and click Next.
6. Enter a phone number to which a text message and/or phone call can be sent in case you forget your password.

Windows installation will continue for several minutes as it finalizes and prepares your computer to be used. After Windows 8 has been installed, you're ready to start using it.

APPENDIX C

Universal Shortcut Keys

IN THIS APPENDIX

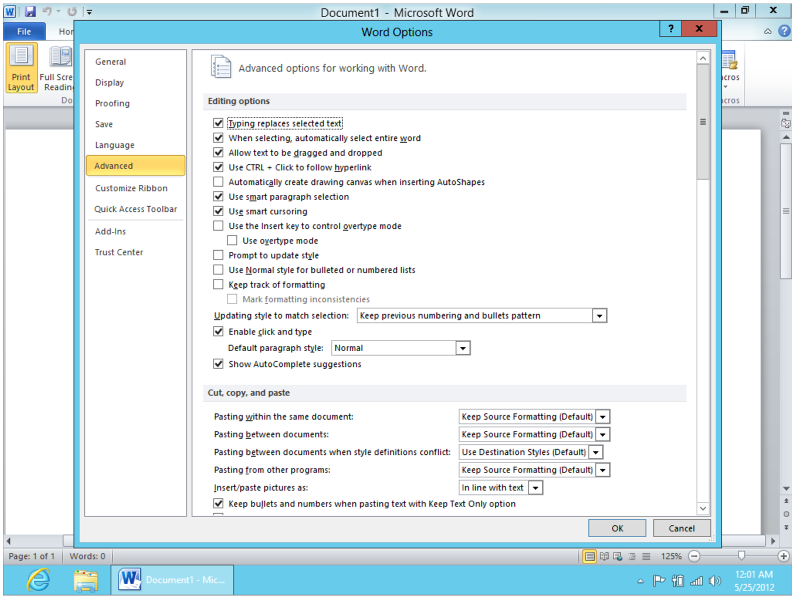
- **General, dialog box, and Explorer shortcut keys**
- **Ease Of Access shortcut keys**
- **Text-editing shortcut keys**
- **Microsoft Internet Explorer shortcut keys**

This is a quick reference to shortcut keys that are used throughout Windows 8. Many application programs use the same shortcut keys. That's why we've titled this appendix "Universal Shortcut Keys." Of course, any program can have additional shortcuts to its own unique features. For example, the Word 2010 Options window shows underlined characters, denoting them as hotkeys for activating an option. The first option is Typing Replaces Selected Text. The hotkey for this option is *T*. (See Figure C.1.) For programs still using menus, the *key+key* combination to the right of each menu command is the shortcut key for using that command from the keyboard without the menu.

Many programs show shortcut keys in the tooltip that appears when you point to a button or icon (see Figure C.2). In the figure, we're pointing to the B (Boldface) button in Microsoft Word 2010. Below the mouse pointer, you can see that Ctrl+B is the shortcut key for boldfacing text.

FIGURE C.1

Shortcut keys on items in the Word 2010 ribbon


Document1 - Microsoft Word
File
Hor
Print Layout
Full Scre Readin
Word Options
General
Display
Proofing
Save
Language
Advanced
Customize Ribbon
Quick Access Toolbar
Add-Ins
Trust Center
OK
Cancel
Page: 1 of 1
Words: 0
125%
Document1 - Mic...
12:01 AM
5/25/2012

Advanced options for working with Word.

Editing options

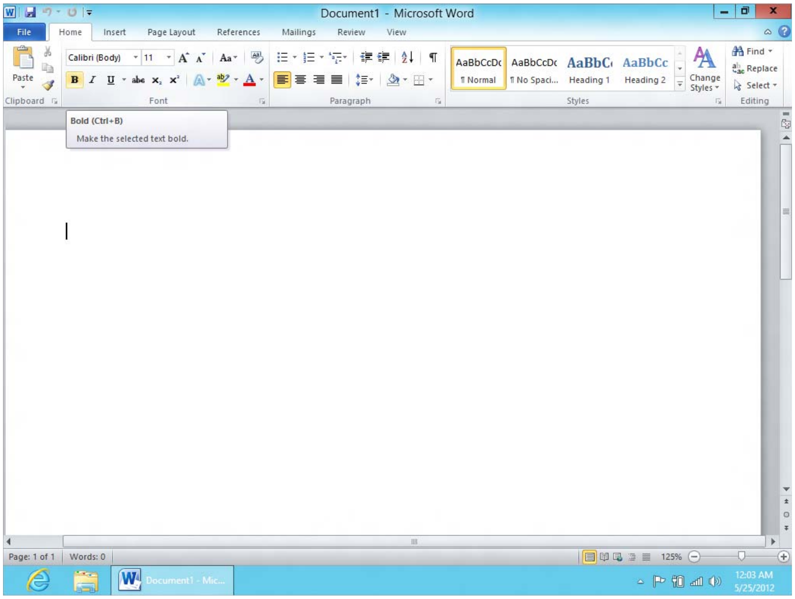
☑ Typing replaces selected text
☑ When selecting, automatically select entire word
☑ Allow text to be dragged and dropped
☑ Use CTRL + Click to follow hyperlink
☐ Automatically create drawing canvas when inserting AutoShapes
☑ Use smart paragraph selection
☑ Use smart cursoring
☐ Use the Insert key to control overtype mode
  ☐ Use overtype mode
☐ Prompt to update style
☐ Use Normal style for bulleted or numbered lists
☐ Keep track of formatting
  ☐ Mark formatting inconsistencies
Updating style to match selection: Keep previous numbering and bullets pattern
☑ Enable click and type
  Default paragraph style: Normal
☑ Show AutoComplete suggestions

Cut, copy, and paste

Pasting within the same document: Keep Source Formatting (Default)
Pasting between documents: Keep Source Formatting (Default)
Pasting between documents when style definitions conflict: Use Destination Styles (Default)
Pasting from other programs: Keep Source Formatting (Default)
Insert/paste pictures as: In line with text
☑ Keep bullets and numbers when pasting text with Keep Text Only option

FIGURE C.2

Microsoft Office 2010 shortcut key hints


Document1 - Microsoft Word
File
Home
Insert
Page Layout
References
Mailings
Review
View
Paste
Calibri (Body)
11
Clipboard
Font
Paragraph
AaBbCcDc
¶ Normal
AaBbCcDc
¶ No Spaci...
AaBbC
Heading 1
AaBbCc
Heading 2
Change Styles
Styles
Find
Replace
Select
Editing
Page: 1 of 1
Words: 0
125%
Document1 - Mic...
12:03 AM
5/25/2012

Bold (Ctrl+B)
Make the selected text bold.

Virtually every program also comes with its own help. Typically, you get to that by pressing Help (F1) while the program is in the active window. Or you choose the ? or Help from that program's menu bar. Use the Help feature of that program to search for the term "shortcut" or "shortcut keys" to see whether you can find a summary of that program's shortcut keys.

Of course, Windows 8 has its own Help, too, which you learn about in Chapter 7, "Help, Support, and Troubleshooting," of this book. To open Windows Help and Support, open the Charms Bar from the Windows desktop, click Settings, and then click Help. Type **shortcuts keys** as your search text and press Enter. The search results will include shortcut keys for Windows 8 and many programs that are built into Windows 8. The following tables provide lots of detail and make a handy reference:

TABLE C.1 General Shortcut Keys

To Do This	Press This Key
Copy selected icon(s)	Ctrl+C
Cut selected icons(s)	Ctrl+X
Paste cut or copied text or item(s) to current folder	Ctrl+V
Undo your most recent action	Ctrl+Z
Delete selected icon(s) to Recycle Bin	Delete or DEL
Delete selected icons(s) without moving to Recycle Bin	Shift+Delete
Rename selected icon(s)	F2
Extend selection through additional icons	Shift+any arrow key
Select all items in a document or window	Ctrl+A
Search for a file or folder	F3
Display properties for selected icon	Alt+Enter
Close program in the active window	Alt+F4
Open the shortcut menu for the active window	Alt+Spacebar
Close the active document in multiple document program	Ctrl+F4
Switch between open programs	Alt+Tab
Cycle through open programs in the order they were opened	Alt+Esc
Cycle through screen elements on the desktop or in a window	F6
Display the shortcut menu for the selected item	Shift+F10
Open/close the Start menu	Ctrl+Esc or ⊞
Open menu or perform menu command	Alt+underlined letter
View menu bar in active program	F10 or Alt
Move left or right in menu bar	← and →

Continues

TABLE C.1 General Shortcut Keys *(continued)*

To Do This	Press This Key
Move up or down in menu	↑ and ↓
Select highlighted menu command	Enter
Refresh the active window	F5
View the folder one level up in File Explorer	Backspace
Cancel the current task	Esc
Open Task Manager	Ctrl+Shift+Esc
Copy dragged item to destination	Ctrl+*drag*
Move dragged item to destination	Ctrl+Shift+*drag*

TABLE C.2 Dialog Box Keyboard Shortcuts

To Do This	Press This Key
Choose option with underlined *letter*	Alt+*letter*
Select a button if the active option is a group of option buttons	Arrow keys
Open a folder one level up if a folder is selected in the Save As or Open dialog box	Backspace
Go to previous tab	Ctrl+Shift+Tab
Go to next tab	Ctrl+Tab
Same as clicking OK	Enter
Same as clicking Cancel	Esc
Help	F1 key
Display the items in the active list	F4 key
Move to previous option	Shift+Tab
Select or clear the check box	Spacebar
Move to next option	Tab

TABLE C.3 Windows 8 Start Screen Keyboard Shortcuts

To Do This	Press This Key
Move Windows 8 app down	Arrow key, Alt+↓
Move Windows 8 app left	Arrow key, Alt+←

To Do This	Press This Key
Move Windows 8 app right	Arrow key, Alt+→
Move Windows 8 app up	Arrow key, Alt+↑
Display unpin option and Advanced Windows 8 icons	Arrow key, App key
Select Windows 8 apps left, right, up, or down	Arrow keys
Move 1 page left on Windows 8 UI menu	Ctrl+←
Move 1 page right on Windows 8 UI menu	Ctrl+→
Return to previous app	ESC
Jump between Windows 8 interface and previous app	⊞
Move Windows 8 app split screen right	⊞+.
Launch desktop	⊞+B
Open Charms Bar	⊞+C
Launch File Explorer on classic desktop	⊞+E
Launch Narrator	⊞+Enter
Open File Search	⊞+F
Open Share Charm	⊞+H
Open Charms settings	⊞+I
Opens Connect Charm	⊞+K
Lock Screen	⊞+L
Launch desktop	⊞+M
Lock device orientation	⊞+O
Second screen – projector mode	⊞+P
Move tiles to the right	⊞+PgDown
Move tiles to the left	⊞+PgUp
Open Search window	⊞+Q
Open Run on desktop	⊞+R
Move Windows 8 app split screen left	⊞+Shift+.
Switch input language and keyboard layout	⊞+Spacebar
Display desktop	⊞+T
Start Ease Of Access Center	⊞+U
Open search settings	⊞+W
Open Power menu (Advanced Tools menu) on desktop	⊞+X
Open App Bar	⊞+Z

TABLE C.4 File Explorer Keyboard Shortcuts

To Do This	Press This Key
Collapse the selected folder.	– on numeric keypad
Display all the subfolders under selected folder.	* on numeric keypad
Select or collapse parent folder.	←
Expand current folder or move to next subfolder.	↓
Display the contents of the selected folder.	+ on numeric keypad
Display the bottom of the active window.	End
Display the top of the active window.	Home
Open selected folder in new instance	Shift+*double-click*

TABLE C.5 Ease Of Access Keyboard Shortcuts

To Do This	Press This Key
Open Ease Of Access center	⊞+U
Switch the MouseKeys either on or off	Left Alt+Left Shift+Num Lock
Swtch High Contrast either on or off	Left Alt+Left Shift+Print Screen
Switch the ToggleKeys either on or off	Num Lock for five seconds
Switch FilterKeys either on or off	Right Shift for eight seconds
Switch the StickyKeys either on or off	Shift five times

TABLE C.6 Windows Help Shortcut Keys

To Do This	Press This Key
Open Windows Help And Support	F1
Display the Connection Settings menu	Alt+N
Display the Help Settings menu	F10
Move back to the previously viewed topic	Alt+←
Move forward to the next (previously viewed) topic	Alt+↓
Display the customer support page	Alt+A
Display the Help home page	Alt+Home
Move to the beginning of a topic	Home
Move to the end of a topic	End
Search the current topic	Ctrl+F
Print a topic	Ctrl+P
Move to the Search box	F3

TABLE C.7 Keyboard Shortcuts

To Do This	Press This Key
Display or hide the Start menu	⊞
Lock the computer	⊞+L
Display the System Properties dialog box	⊞+Break
Show the desktop	⊞+D
Open Computer folder	⊞+E
Search for file or folder	⊞+F
Search for computers	Ctrl+⊞+F
Display Windows Help	⊞+F1
Minimize all the windows	⊞+M
Restore all minimized windows	⊞+Shift+M
Open the Run dialog box	⊞+R
Show Flip 3D	⊞+Tab
Open Ease Of Access Center	⊞+U
Open Windows Mobility Center	⊞+X

TABLE C.8 Text Navigation and Editing Shortcuts

To Do This	Press This Key
Move cursor down one line	↓
Move cursor left one character	←
Move cursor right one character	→
Move cursor up one line	↑
Delete character to left of cursor	Backspace
Move cursor to start of next paragraph	Ctrl+↓
Move cursor to start of previous paragraph	Ctrl+↑
Move cursor to start of previous word	Ctrl+←
Move cursor to start of next word	Ctrl+→
Select all	Ctrl+A
Copy to Clipboard	Ctrl+C
Copy the selected text to destination	Ctrl+*drag*
Select to end of paragraph	Ctrl+Shift+End
Select to end of word	Ctrl+Shift+→
Select to beginning of word.	Ctrl+Shift+←

Continues

TABLE C.8 Text Navigation and Editing Shortcuts *(continued)*

To Do This	Press This Key
Select to beginning of paragraph	Ctrl+Shift+↑
Select to end of document	Ctrl+Shift+End
Select to top of document	Ctrl+Shift+Home
Paste Clipboard contents to cursor position	Ctrl+V
Cut to Clipboard	Ctrl+X
Undo last action	Ctrl+Z
Delete selected text or character at cursor	Del
Cancel the current task	Esc
Select to character in line above	Shift+↑
Select to character in line below	Shift+↓
Select character to left	Shift+←
Select character to right	Shift+→
Select from cursor to here	Shift+*click*
Select to end of line	Shift+End
Select to beginning of line	Shift+Home
Select text down one screen	Shift+Page Down
Select text up one screen	Shift+Page Up

TABLE C.9 Microsoft Internet Explorer Shortcuts

To Do This	Press This Key
Add `www.` to the beginning and `.com` to the end of text in Address bar	Ctrl+Enter
Add the current page to favorites	Ctrl+D
Click the Information bar	Spacebar
Close current tab (or the current window if tabbed browsing is disabled)	Ctrl+W
Close other tabs	Ctrl+Alt+F4
Close Print Preview	Alt+C
Close the current window (if you have only one tab open)	Ctrl+W
Copy selection to Clipboard	Ctrl+C
Display a list of addresses you've typed	F4
Display a shortcut menu for a link	Shift+F10

To Do This	Press This Key
Display first page to be printed	Alt+Home
Display last page to be printed	Alt+End
Display next page to be printed	Alt+↓
Display previous page to be printed	Alt+←
Display zoom percentages	Alt+Z
Find on this page	Ctrl+F
Go to home page	Alt+Home
Go to selected link	Enter
Go to the next page	Alt+↓
Go to the previous page	Alt+← or Backspace
Go to the Toolbar Search box	Ctrl+E
Help	F1
Move back through the items on a web page, the Address bar, or the Links bar	Shift+Tab
Move back through the list of AutoComplete matches	→
Move backward between frames (if tabbed browsing is disabled)	Ctrl+Shift+Tab
Move focus to the Information bar	Alt+N
Move forward through frames and browser elements (if tabbed browsing is disabled)	Ctrl+Tab or F6
Move forward through the items on a web page, the Address bar, or the Links bar	Tab
Move forward through the list of AutoComplete matches	↓
Move selected item down in the Favorites list in the Organize Favorites dialog box	Alt+↓
Move selected item up in the Favorites list in the Organize Favorites dialog box	Alt+↑
Move the cursor left to the next punctuation in the Address bar	Ctrl+←
Move the cursor right to the next punctuation in the Address bar	Ctrl+→
Move to the beginning of the page	Home
Move to the end of the page	End
Open a new tab in the foreground	Ctrl+T
Open a new tab in the foreground from the Address bar	Alt+Enter
Open a new website or page	Ctrl+O
Open a new window	Ctrl+N
Open Favorites	Ctrl+I

Continues

TABLE C.9 **Microsoft Internet Explorer Shortcuts** *(continued)*

To Do This	Press This Key
Open Feeds	Ctrl+J
Open History	Ctrl+H
Open links in a new background tab	Ctrl+*click*
Open links in a new foreground tab	Ctrl+Shift+*click*
Open search query in a new tab	Alt+Enter
Open the Organize Favorites	Ctrl+B
Page Setup	Alt+U
Paste Clipboard contents	Ctrl+V
Print the current page or active frame	Ctrl+P
Refresh the current web page	F5
Refresh the current web page regardless of timestamp	Ctrl+F5
Save the current page	Ctrl+S
Scroll down a line	↓
Scroll down a page	Page Down
Scroll up a line	↑
Scroll up a page	Page Up
Select all items on the current web page	Ctrl+A
Select frames to print in framed website	Alt+F
Select the text in the Address bar	Alt+D
Set printing options and print the page	Alt+P
Stop downloading a page	Esc
Switch between tabs	Ctrl+Tab or Ctrl+Shift+Tab
Switch to a specific tab number	Ctrl+*n* (where *n* is a number between 1 and 8)
Switch to the last tab.	Ctrl+9
Toggle between full-screen and regular views.	F11
Toggle Quick Tabs on or off	Ctrl+Q
Type the number of the page you want displayed	Alt+A
Zoom in	Alt+plus sign
Zoom in 10 percent	Ctrl+plus sign
Zoom out 10 percent	Ctrl+minus sign
Zoom to 100 percent	Ctrl+0

APPENDIX D

Windows 8 Touch Gestures

IN THIS APPENDIX

- Windows 8 Touch Gestures

The Windows 8 touch interface is designed to be used on different platforms with different inputs. Users on regular laptops or desktop computers can use keyboard and mouse movements to select, deselect, or move items, resize windows, and perform other tasks. With Windows-based tablets, however, you can use Windows 8 touch interface gestures. These are hand gestures you can use instead of relying on simple clicks or requiring that a mouse device performs Windows tasks.

Table D-1 lists touch gestures and a description of those gestures. Keep in mind that other gestures may be available based on a particular Windows 8 app that you are running. Also, not all of these gestures are available with every app. It's up to the app developer to program them into their app.

TIP

Semantic Zoom is used in Microsoft Windows 8 apps to allow users to navigate large amounts of data presented in a single view. For example, users can view full-sized maps by pinching and zooming into a region on the map or a small location on the map. Conversely, the user can zoom out from a point on a map to a larger view.

TABLE D.1 Windows 8 Touch Interface Gestures

This Action	Does This
Slide your finger left or right.	Scrolls through the screens.
Tap once.	Starts an app.
Swipe from the right side of the screen toward the middle.	Displays the Charms Bar, which includes the Search, Share, Start, Devices, and Settings charms. This action also displays a window that shows connection information, battery information (if using a mobile device), the time, and the date.
Swipe from the left side of the screen toward the middle.	Launches the last app that was launched.

Continues

TABLE D.1 **Windows 8 Touch Interface Gestures** *(continued)*

This Action	Does This
Swipe down.	Displays additional menus.
Press and hold down on an item and then move it.	Enables you to move an item onscreen.
Tap and hold.	Shows the name of the element or the type of action you can perform with it.
Swipe down on an item.	Selects the item.
Swipe down past an item.	Allows movement of the item so you can move it from its current placement on the screen.
Slide an item from left or right.	Enables you to drag the item across the screen.
Place two or more fingers on an item and rotate your fingers.	Rotates an object.
Pinch inward with two or more fingers.	Zooms in on an item that uses Semantic Zoom, such as an object on an interactive map.
Pinch outward with two or move fingers.	Zooms out from an item that uses Semantic Zoom, such as zooming out on a photo or picture.
Swipe from left edge, hold, release.	Snaps an app on the left side of the screen so that it stays onscreen with another window to the right of it. You must have your screen set to at least 1366 × 768 resolution.
Swipe from left to right or right to left in Internet Explorer.	Enables you to navigate from page to page while web browsing.
Press and hold down on an app, and then drag to the bottom of the screen.	Closes the app.
From the left side of the screen, swipe to the right, hold, and then swipe to the left.	Shows currently running apps.
Swipe from the left and release.	Switches the active app.

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